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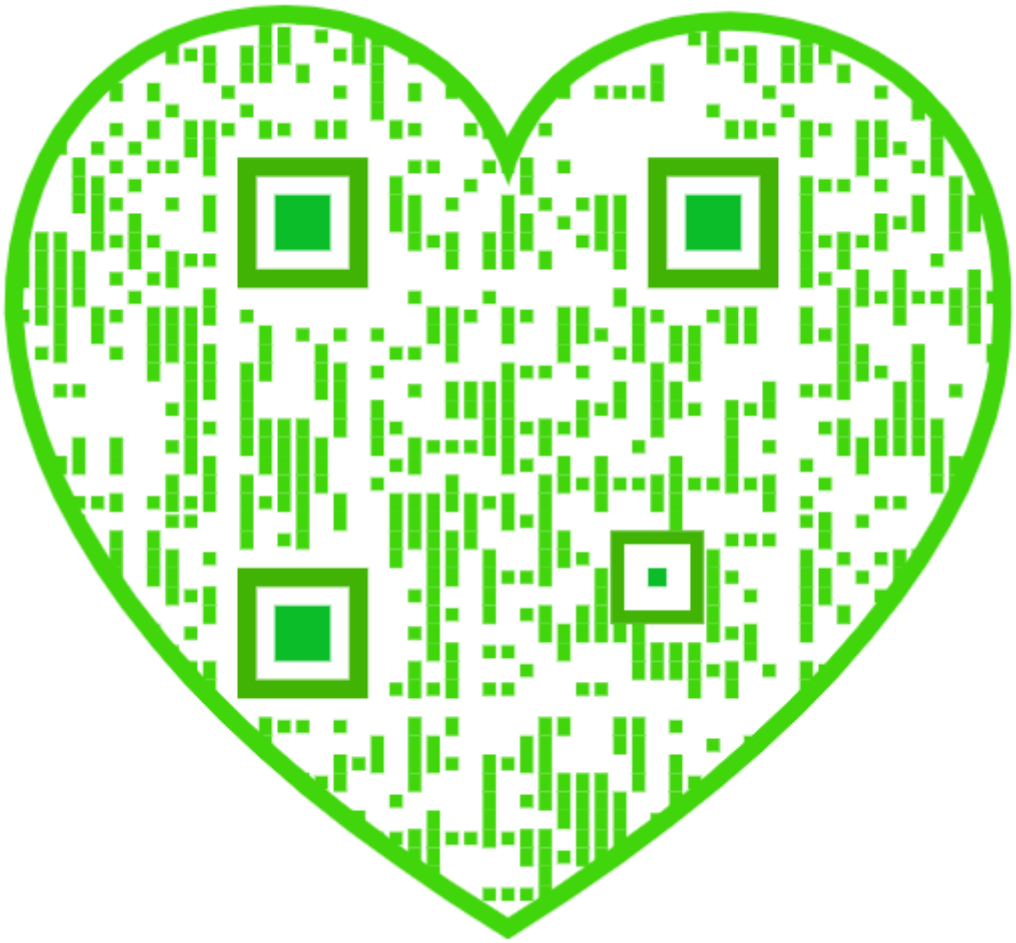

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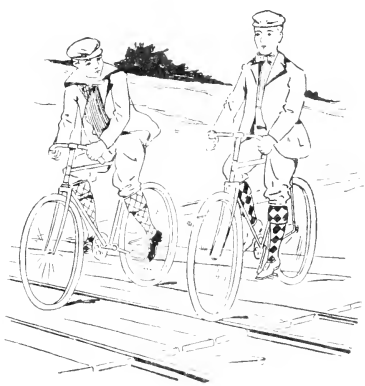

## Spalding's Official Bicycle Guide

For 1899

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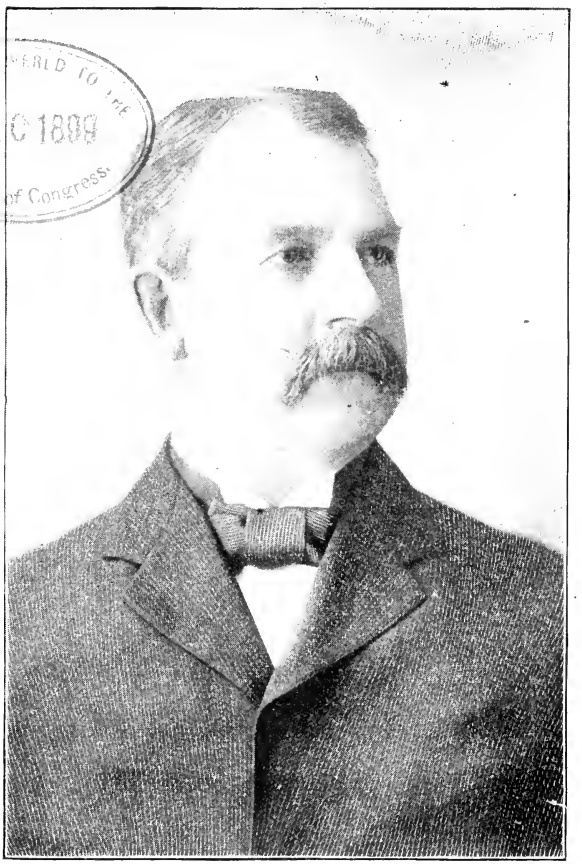

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A. G. SPALDING.

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1899

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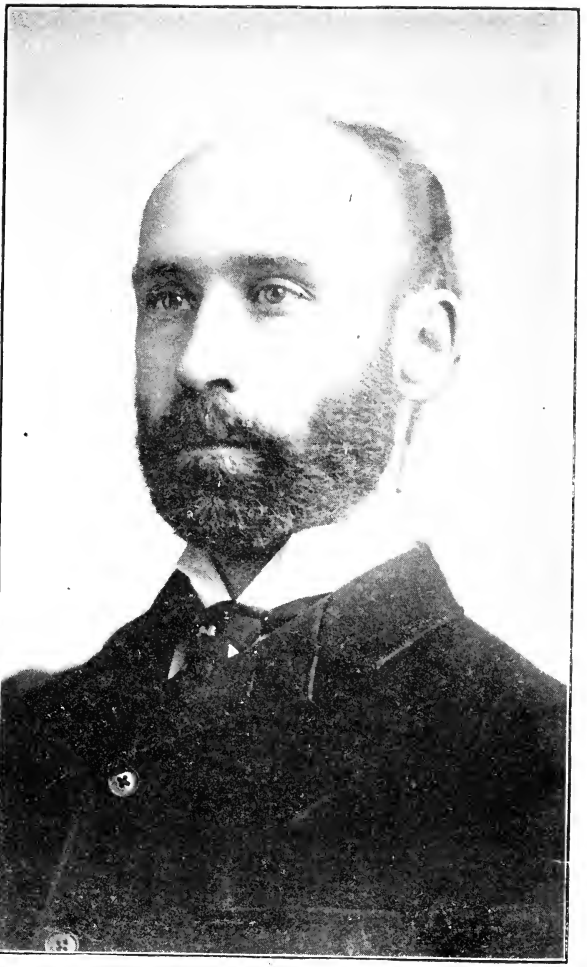


THOMAS J. KEENAN,
President League of American Wheelmen.

33976
Mem'd. 99.

# THE OUTLOOK FOR 1899.

BY G. E. STACKHOUSE.

The future of racing in this country depends largely, in my mind, upon the outcome of the present season. So long as the League of American Wheelmen continues to conduct the sport the followers of the game can be assured that it will be conducted honestly, and that both the public and the riders will be protected. I have heard it said that the L. A. W. is not a competent organization to remain in control of the sport, because racing had grown enormously during the last ten years, while the League was being conducted on the same lines which were in vogue when the organization had only a few hundred instead of many thousand members.

In the opinion of some of the members of the L. A. W. the organization should give up the control of racing. There is no doub that these advocates are honest in their opinion. They seem to think thar the doings of the racing department take up too much space in the daily and weekly publications of the country, to the exclusion of news from other departments of the League. There is a sporting feature connected with racing, and then there are, as a general thing, in the racing department of the League, several hustling young men, who work hard and keep it up right through the year. Publicity is a natural sequence. Our good-roads friends sometimes say: "But why don't we get more publicity in the newspaper?" That can be answered by nearly every prominent cycle writer in the country. Most of the newspapers which devote more or less space to cycling are fairly hungry for good-roads matter, but they cannot get it. There is no intention to criticise any other department in the L. A. W., but I am convinced that if the good-roads workers would

ALBERT MOTT,
Ex Chairman L. A. W. Racing Board.

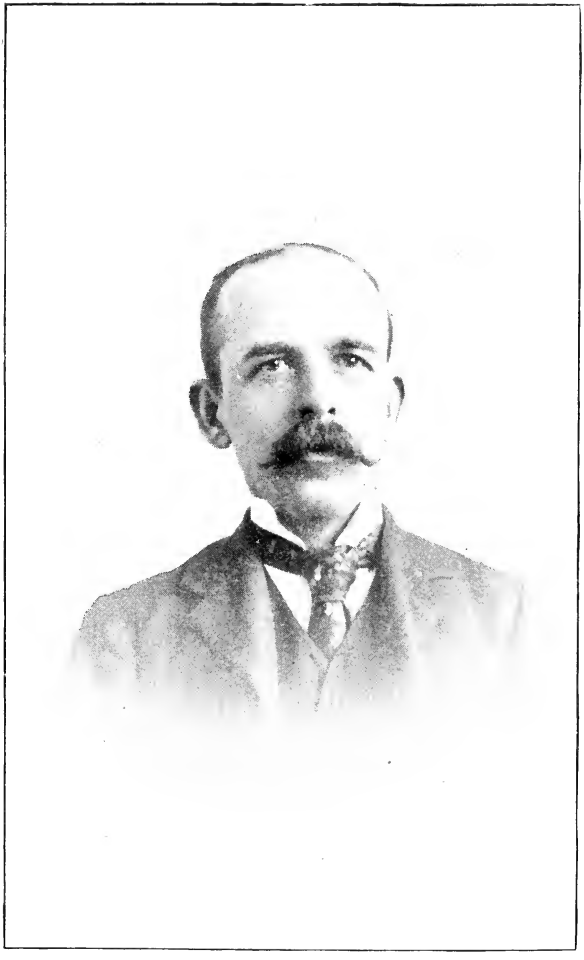
make it a point to be interviewed more frequently by newspaper men that good-roads matter would receive considerable more public attention than they do to-day.

Those who favor the L. A. W. continuing in control of the sport—and the number is increasing daily—I believe that the organization will not only remain in absolute control of the sport this year, but for many years to come. The outlaws may centre their efforts on some particular locality and gain a temporary advantage in that little district, but it will not be for long. In a company of this sort—a purely proprietary arrangement—there is no discipline, and the entire institution must become chaotic sooner or later. If an effort is made to discipline a rider among the insurgents, it will be like it was in the base ball brotherhood fight back in 1890. The rider will follow the example of his base ball brother and tell the professional promoter to go to. "If you fine me, I will jump over the fence." And there you are. What are you going to do about it?

There are perhaps 25,000 amateur and professional riders, or rather racing men, in the United States, of whom less than one per cent. have allied themselves with the N. C. A. Its efforts to secure recognition by the great International Cyclists' Association, representing the principal European countries, as well as the United States, have been distinctly repudiated at a late meeting of that body, and no riders affiliated with the N. A. C. will be permitted to compete in races in European countries under the sanction of any racing organization recognized by the International Association.

In this country the conditions are almost as hopeless, for the L. A. W. is affiliated with the Amateur Athletic Union, the Military Athletic League, the Intercollegiate Athletic Association, the Y. M. C. A. and other kindred associations.

These rebellious efforts to disturb the racing jurisdiction of the L. A. W. have had their counterparts in every form of outdoor sports from the time when these sports were first established, but history fails to record a single instance in which the jurisdiction of the dominant body has been overthrown, unless we except the single sport of professional foot racing, in which the professionals went apart at one time and established a sort of separate jurisdiction for



GEORGE STACKHOUSE.
L. A. W. Racing Board.

themselves. The result was that professional sprint racing became in a short time so unworthy and unreliable that it was at first condemned and then totally ignored, with the result that it was shunned by many who did not care to have their sporting records smirched.

Cycling in America owes its very existence, much more its maintenance, to the L. A. W. As an organization, it fought for the rights of wheelmen in the early days of the sport; secured the passage of laws establishing the rights of the wheel on the public roads, upon the same footing as other vehicles; overcame the prejudice of park boards and city authorities; secured numerous favorable decisions in the highest courts in cases where the rights of cyclists were contested; obtained legislation providing for the improvement of roads; the erection of guide boards and the construction of cycle paths; secured the passage of laws in all States declaring the bicycle to be entitled to classification as baggage when carried in railway cars, without extra charge to the touring cyclist; printed and distributed thousands of maps and road books, in which popular and attractive cycling routes were classified, arranged and described; and in every way the League has been the foremost force in demonstrating the practical utility of the bicycle and insuring its popular use.

A. G. BATCHELDER,
Of the National Cycling Association.

# THE NATIONAL CYCLING ASSOCIATION.

BY A. G. BATCHELDER.

Unquestioned success awaits the National Cycling Association because the reasons for its existence are based on common sense, necessity and the unanimity of the interests involved in cycle racing—a sport second to none as a means of exciting and cleanly competitive diversion when properly directed.

Including the track owners, who realize more thoroughly than others that their investments, in order to be remunerative, must be utilized in such manner as to invite public patronage ; containing the race promoting clubs, which embrace the amateur talent and also conduct a large percentage of the meets ; and, through the American Racing Cyclists Union, allowing representation to the professional riders who obtain their livelihood by efforts awheel, the N. C. A. concentrates the essentials of the sport, and will supply a permanent and satisfactory form of government that will improve as the organization grows older in years and experience.

That the track owners should have the right to elect when and how they care to use the plants in which they have risked their money, except when they mutually agree among themselves upon a defined course of action, is a privilege that calls for no argument. That the race promoting clubs, which shoulder the major share of the risks of promoting and also encourage and foster the amateur ranks, should be heard in the government of the sport is another logical transparency admitting of no debate. That the professional rider, who honestly employs his physical ability in speed trials, should be accorded representation and consulted in those phases of the sport such as effect him vitally is also a justice that came with the birth of the Constitution of our country.

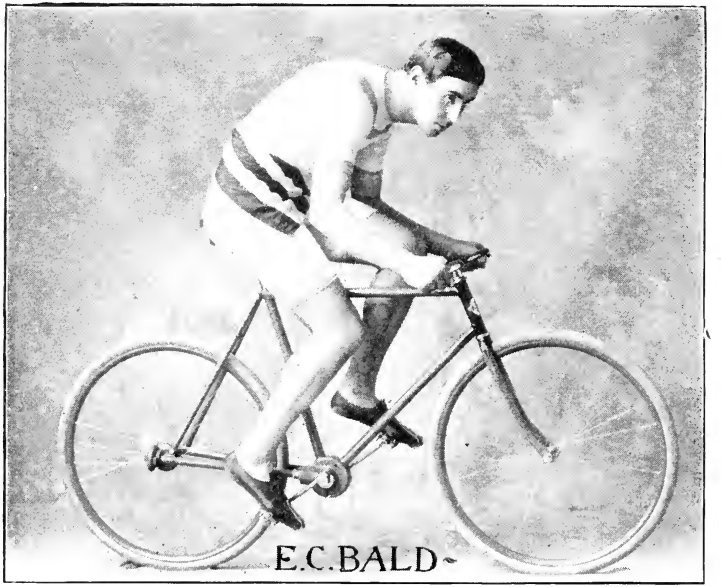
EDDIE CANNON BALD.

The assertion that these interested elements cannot conduct the sport in a manner that will keep it above reproach is unworthy of reply, and the future of the N. C. A. will forever silence such a sophistry.

With capable and unselfish enthusiasts occupying its chief executive offices, the L. A. W. can be made again a body of extreme worth to cycling; but racing no longer should be included in the objects on which the League bases its claims for recognition and support from wheelmen. The sport now demands more attention, and of a more permanent character than can be supplied by the League with its annually changing administration of affairs, Both are better apart, and with a large and powerful element in the League sharing this sentiment—evidenced in one instance by the abolishment of a State racing board by the New York division—the sport could expect even less attention than it formerly attracted from the League.

Cycle racing's future in the States east of the Missisippi River, with the exception of Louisiana, will be amply provided for by the National Cycling Association, which promises numerous innovations and improvements. Alliances with the Southern Cycling Association, which directs affairs in Louisiana; with the Western Cycling Association, which exercises control in Colorado; and with the California Associated Cycling Clubs, undisputed now on the Pacific Slope, are now in progress of negotiation. An understanding with the governing bodies of other countries, particularly Canada, will be of the immediate future.

The N. C. A. has a logical excuse for life, and it has come to stay. Its formation is a national sequence of a gradually growing disinclination upon the part of the L. A. W. to provide properly for cycle racing government. To enumerate the instances which finally culminated in the "breakaway" at Trenton of the leading professionals last fall, would be to reiterate history that is of too recent date to warrant the telling. Then, too, the lack of consideration shown track owners had its result; and even in the L. A. W. itself the divorce of the sport from the body has been a question of long standing. And now it has come.




EDDIE BALD ON A SPALDING CHAINLESS.

# THE UNIVERSALITY OF THE WHEEL.

Any idea that the wheel was responsible for nothing more than a passing fad and a popular pleasure that would be put aside in favor of some new diversion, has been dispelled. It has come to stay. It has done more than any other piece of mechanism devised by the genius of man to combine the best means for business and pleasure. It has the approval of all without regard to age, sex, nationality, social status or previous condition.

In the enginery of war we have made greater progress than any other nation on earth, and the time cannot be far distant when war would mean such horrible destruction of life and property that the very dread of it will prove the means of universal peace. The devotees of Mars will have accomplished what the followers of the meek and lowly Nazarene have toiled for in vain through all the centuries.

But applied genius in the wheel outstrips all competition, as it appears in any other line. From the old wooden-framed velocipede to the present chainless bicycle is the record of but a few years, and yet it marks a progress that finds a counterpart in no other field of invention, unless it be that of electrical science. And even in the military world the wheel has forced honorable recognition. One of the latest improvements is such that will enable the soldier to sit at ease on his bicycle while he loads and fires. It outclasses the horse, for there will be no rearing and plunging, no involuntary advances or retreats for which demoralized horse sense instead of human judgment will be responsible. And the wheel can subsist on the enemy's country, no matter how it may be laid waste upon the principle that devastation means starvation.

The wheel is more popular than ever before. Whether as a necessity or a luxury, it has the call, with all classes and in all localities. It is better than ever before, cheaper than ever before, and more in demand than ever before.

Stevens. Cooper. Gardiner. Bald.

ADMIRING BALD'S NEW SADDLE.

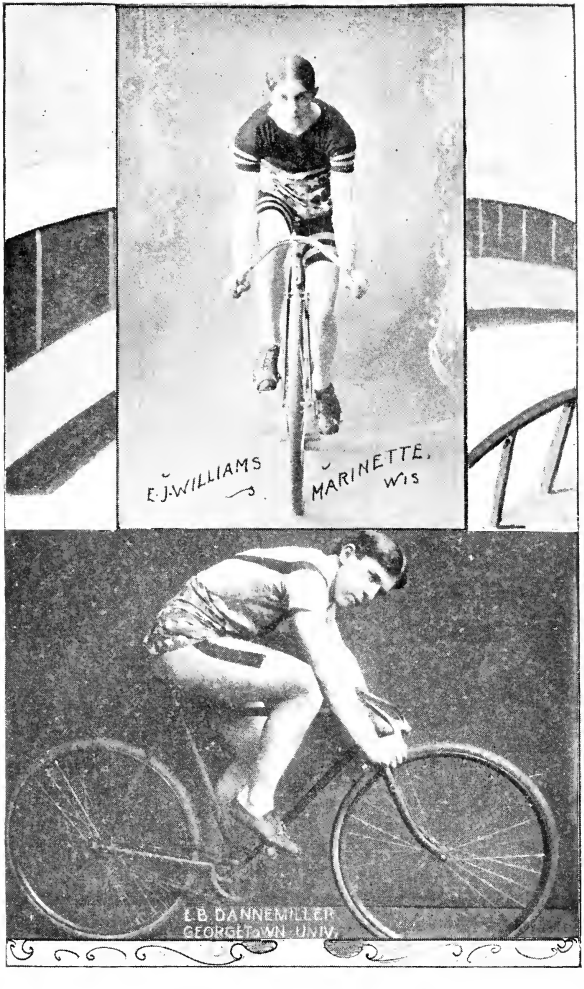
# RACING OF THE YEAR 1898.

BY A. G. BATCHELDER.

Complicated, indeed, was the '98 professional cycle championship, and the tangle resolved itself into a quintette of claimants for the year's title. Bald, Gardiner, Kimble, Taylor, and Tom Butler each had a coterie of adherents who industriously put forward the particular line of deduction which landed their idol at the top of the heap.

Bald, always tardy in reaching championship form, found Gardiner with a substantial lead when he joined the National Circuit. It was some time before the Bison began to show in the count, and he did not gain the lead in the point table until the National meet at Indianapolis the second week in August. A win of the half-mile big score championship carried him to the fore, while Gardiner, sadly off condition, dropped several pegs down the ladder. Bald continued to win consistently, increasing his total of points until he had a considerable advantage, and just when he was moving yards faster than his rivals he suffered a fall at Mahanoy City, Pa., which placed him on the retired list for a fortnight, compelling him to lose several important meets, including the great annual at famous Hampden Park. This unlucky fall allowed Bald's opponents to draw closer, without fight from him, until when the "breakaway" from the L. A W. occurred his "cinch" lead had dwindled practically to nothing. Being compelled through his theatrical engagements to retire from the amended National Circuit, Bald did not ride at Cape Girardeau's two-day meet, which concluded the regular campaign. It was here that Owen Kimble jumped to the fore, and even figuring the disputed Sunday championship run at St. Louis—in which Bald, Cooper, and Kimble were the only contestants—the Kentuckian had one point the best of all his rivals.

In all fairness, however, it must be admitted that the showing of Arthur Gardiner for the entire season exceeded that of all the circuit




TWO FAST AMATEURS.

chasers. He was unfortunate in the big score championships, but landed fourteen of the lesser events, or five more than his nearest competitor, Taylor. In money won, the flaxen haired Chicagoan's total footed up more than that of any other sprinter. Figuring according to the '97 plan of deciding championships, Gardiner had 76 points; with the others following in this order: Taylor, 59; McFarland, 54; Bald, 44; Stevens, 40; Kimble, 39; Cooper, 33; Freeman, 30.

Owen Kimble was the only one of the top notch contingent to land two championships; the two-mile at Indianapolis, and the quarter-mile at Washington, both being annexed by him. Estimating all possible points, "Old Kaintuck" wound up at Girardeau one point to the good. But the modest rider from the blue grass region does not force his claim to championship honors, being content to allow his friends to do the shouting.

"Major" Taylor was one of the surprises of the season, and the all around work of the colored boy stamped him as a remarkable pedaler. He failed to win a big score championship, but counting trial heats and finals, with the exception of McFarland, he defeated every white rider more times than he was beaten by any one of them. In championships won, he ranked next to Gardiner with nine to his credit, Taylor used the sympathy cry too much for his own good, averring that his Caucasian brothers employed unfair methods in trying to beat him. Such was not the case, for the "Major" was no more sinned against than were the others, all of whom at times had reason to complain to the referee. His desertion of the A. R. C. U. lost him many friends, and may cause him some inconvenience in the future.

Tom Butler, the L. A. W. champion, purloined the title after the "breakaway" at Trenton, scoring in three increased point championships with only mediocre talent opposed to him. It requires considerable imagination to place the crown upon the heod of the Boston "phenom" of '96, and few will attempt the impossible in this respect. Thomas is a good boy, but not the best of the bunch.

Dr. Brown. A. C. Mertens. Eddie Bald. Earl Kiser. Nat Butler. Arthur Gardiner. Tom Cooper. O. L. Stevens.

# GENERAL NOTES.

It is a convenient thing that the heart is an organ so situated and so connected as to render it singularly amenable to investigation. If one is the least bit anxious as to the integrity of his or her heart it is the simplest matter in the world to find out whether any suspected trouble is real or purely imaginary. Any competent physician can tell the story after a two-minute examination.

As a matter of precaution it would be well for every rider who proposes to attempt racing for the first time, to submit his heart to the doctor's ear before beginning training, but most of the talk about cycling as a cause of heart disease is purely rubbish and any honest doctor will tell you so.

**The Feminine Riders.**

There is no question but that high gears contribute to the rider's grace of appearance, particularly if the rider be a woman. The slower the leg motion when fair progress is made, the more orderly and dignified the aspect of the rider. It will not do, however, for the feminine cyclist to use the extra long cranks which are necessary to easy work with very high gears, for there is no grace in inordinately high knee-action. High gears and short cranks do not go well together if economy of bodily strength is considered, and so it seems best for the woman of average "reach" to use only a moderately high gear. "Looks" are not everything.

THREE CHRISTY RACING SADDLE ENTHUSIASTS.

## Something to be Avoided.

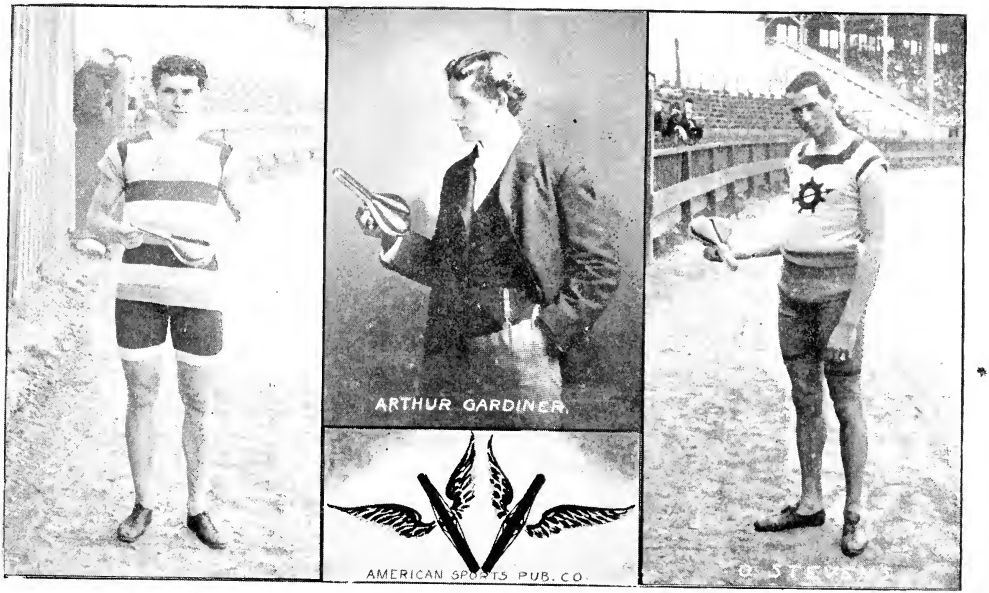
The rider who uses a low crank hanger for the first time should keep constantly in mind the fact that his pedals are pretty near the ground. When the pedals catches on something just low enough to have cleared with the older-fashioned high hanger and just high enough to interfere with the newer-fashioned low hanger, a terrific tumble may follow.

## Value of Systematic Training.

The fact that the men who in recent years have made the best records on road and path have suffered no bodily impairment, goes to show the immense value of systematic training. The ones who get hurt are almost always those who enter contests, particularly road races, without adequate preparation.

## Carrying Things Awheel.

The art of carrying things is worth acquiring, for it may prove exceedingly useful upon occasion. After seeing the newsboy rider with a hundred papers under his arm, or the practiced errand boy or electric light man, each loaded down with the things of his vocation, yet riding with ease and unconcern, one who has never tried it might think the trick a simple one. A single attempt carries positive conviction of the fallacy of the idea. To ride with so much as a light overcoat thrown over the arm offers surprising difficulties the first time it is attempted. A little practice, however, will enable one to handle fair-sized loads with confidence, and the ability thus acquired is at times of great practical advantage.




Dr. Brown. Arthur Gardiner. O. L. Stevens.

THREE WELL KNOWN SPEED MERCHANTS.

**A Foolish Fad.**

The ludicrous fad of cutting off the handle bars to within three or four inches of the head and sticking the grips on the remaining stumps, is spreading. A machine thus mutilated suggests a hornless ox or an earless mule, and always a brainless rider.

**Toe-Clips.**

Beware of toe-clip substitutes which practically lock the feet to the pedal. A properly made clip instantly releases the foot in case of a fall, and any device which fails of doing this may be classed as dangerous.

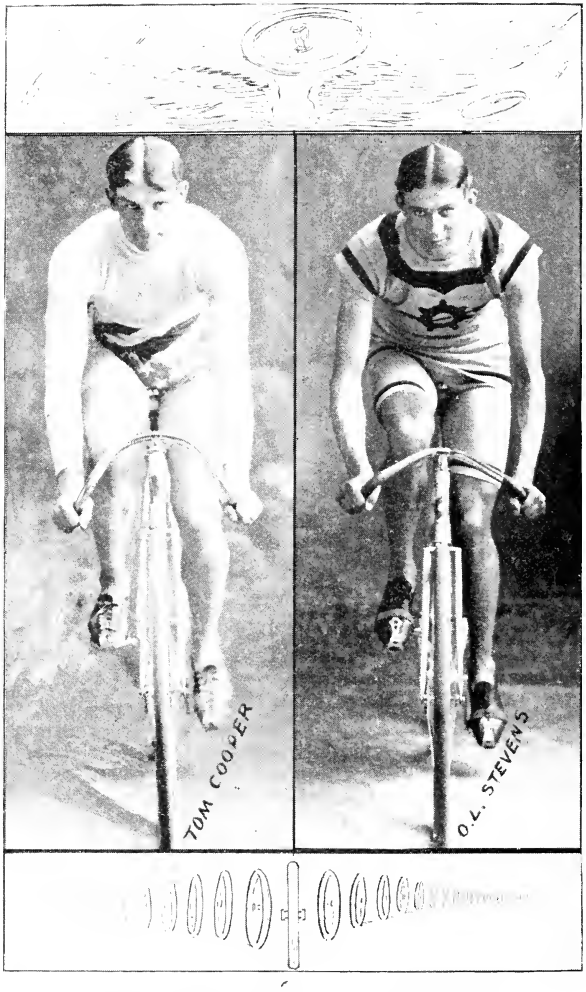
**Get a New Wheel.**

No rider can get out of cycling the most there is in it unless he provides himself with a new mount at least once a year. Some things improve with use. Bicycles don't. The newer the wheel the better it is, other things being equal.

The usual talk about getting a new bicycle limbered up is of no account. Provided the machine is correctly adjusted in every particular it can never be more "limber" than when it leaves the factory. This with respect to chain wheels. There is reason for supposing that the running of bevel gears may improve somewhat with use.

Therefore, the first wear of a bicycle of the prevailing type must necessarily be its best and most satisfactory wear. If well cared for, a wheel of reliable manufacture will meet the necessary requirements of a particular rider fairly well for two, or possibly three years; but no old bicycle can ever be the equal of a new bicycle of the same grade. Deterioration sets in with the first day's use, although it may be scarcely perceptible at first.

In the new bicycle you have a perfect thing of its kind, and it can never be perfect again. There is also a wholesome satisfaction in




TOM COOPER AND O. L. STEVENS.

feeling that you are up-to-date and getting the advantage of the latest improvements in this age of rapid progress.

Of course a second-hand machine of reliable make that has been well kept contains more use than a badly constructed new one. We should never hesitate to recommend a rider to purchase a first-class second-hand bicycle in preference to a newly assembled trash.

It is the opinion of all old and experienced cyclists that it pays financially, as well as otherwise, to start with a new wheel each spring. After the first year the machine deteriorates in value even faster than in usefulness. When the change is made annually the rider is saved all expense for ordinary repairs, new tires, restoration of finish, etc.

## A Chapter on Brakes.

It is a fact not recognized by many wheelmen that a brake is more needed with a high gear than with a low one. Every one who has ever changed from a low gear to a higher one is aware of the greater impulse given to the bicyle by each revolution of the pedal as the gear is raised, and it must be evident to all that the difficulty of slowing down is increased in the same proportion. In city streets it is often necessary to stop quickly, or at least greatly to reduce one's speed, and when an emergency arises the man with a high gear may find a brake uncommonly handy.

One of the objections to a brake of the ordinary type is that it is rather difficult to deal with in case one uses an adjustable handle-bar. The adjustable handle-bar has come into general use, and is found to be entirely free from the objections that were alleged against it when it was first brought into vogue. As a matter of fact, however, when a rider has once got his handle-bar just in the right position, he is not likely to make many changes in it, though, if he has occasion to push several miles in the teeth of a wind, it is a decided advantage to drop it an inch or two. If the bicycle is fitted with a brake, the readjustment requires considerable time, whereas the change of the position of the bar alone is a matter of a few

JIMMY MICHAEL,

seconds only. Comparatively few men ride bicycles provided with brakes, but the brakeless wheel is dangerous on country roads, unless one has acquired expertness in the use of the shoe sole as a brake. The knack of doing this is not hard to learn. Care must be taken to have a sole free from nails. In going down a long hill, where a good deal of braking is necessary, if the sole of the shoe is not very thick, the friction engenders so much heat as to make it uncomfortable at times. The use of a pointed shoe in breaking is to be avoided, as the point may be drawn so suddenly into the fork as to cause a complete stoppage of the wheel and a tumble. When first using the foot as a brake, there is danger of applying it too hard and reducing the speed too quickly. The best place to practice is near the foot of a hill that is not very steep. Some riders are expert enough to use either foot for braking, and a rider who made an extended tour on his wheel last summer reported that he found so many hills and such steep ones that he had worn through the soles of both his shoes. Speaking generally, the right foot is the best one to place on the tire when a brake is necessary ; for, if any reason arises for dismounting, the left foot is in its normal place on the pedal, and one can dismount in the usual manner without the slightest trouble.

## Styles of Pedaling.

Points on the proper way to push the pedals is the first information given the learner by a competent instructor after the novice has reached the stage where he can ride without assistance. Usually the instruction given is correct, and is on ankle motion. The theoretical ankle motion may be simply stated as depressing the heel at the beginning of the down stroke of the pedal, and a lowering of the toes at the finish. In this way the rider gets a push as the pedal passes over the dead centres on the top of the pedal circle, and claws it around as it passes the lower dead centre.

Many riders have the impression that this is the correct pedaling, and it is for certain styles of work. It is a widespread belief that it is the most effective style for getting power from the wheel, but this

THE SPALDING TEAM.

EARL KISER, Half Mile L. A. W. Champion. A. C. MERTENS, Five Mile L. A. W. Champion.

is a mistaken notion. The ankle motion is effective in hill climbing, but not for speed work.

In distance riding, too a different style of pedaling is used by experts. As a rule they do not depress the heel at the beginning of the down stroke of the crank, but carry the foot horizontal with the ground nearly all the way round.

The philosophy of effective pedaling, ankle motion and clawing may be explained by carefully considering the functions that enter the problem. The leg of the average wheelman has been estimated to weigh 32 pounds ; that is, the dead weight of the leg alone applied to the pedal would be equal to a pressure of 32 pounds there. Now, in a full revolution of the pedals, this same weight has to be lifted, so for practical purposes there is no pressure exerted by dead weight, as it is considered that one leg balances the other in this relation. One of the functions in pedaling is knee action ; that is, the height through which it is necessary to lift the thigh before the down stroke is made. Experts differ in this regard. Some favor a long crank and a consequent large knee action, while others contend that a small knee action saves power, and, therefore, use a shorter crank. The variation in crank lengths is generally left to the physical characteristics of the individual, and has an important bearing on pedaling, as will be shown later. The position in which the foot rests on the plates of the pedal is the other determining point.

The end to be reached must determine the style of pedaling to be used. For slow riding the best application of power will be found in the regulation ankle motion ; in hill work, also, this style is commended by the experts. In distance riding, where wear on the muscles is the important point and a steady pace is kept up for hours, the best style of pedaling is that which entails the least exertion on the part of the rider, and hence the foot is held horizontal with the ground and the hardest push is applied just before the pedal is half through the stroke, or the point where power is the most effective, the rider contenting himself with following the pedal the rest of the way and not wasting an effort to make a slight gain by pushing the pedal over the dead centre at the top or pulling it around at the bottom.

EARL W. PEABODY,
Winner of 110 Firsts in 1897.

In racing the most marked difference in style is noticed, and the higher the gear the more accentuated this becomes. Lesna, the French crack, shows this to a marked extent. His pedaling, whether at speed or at a slower pace, was like clockwork. He raised his high thigh, bringing his knee up so that the angle made by a line from his toe to his instep to his knee was very small. Many of the trainers commented on this and said that he had too much knee action. The fact was that by this raising of the heel, which was not depressed during the entire stroke, he nearly gained a straight line to apply his power, as well as a momentum for his downward push.

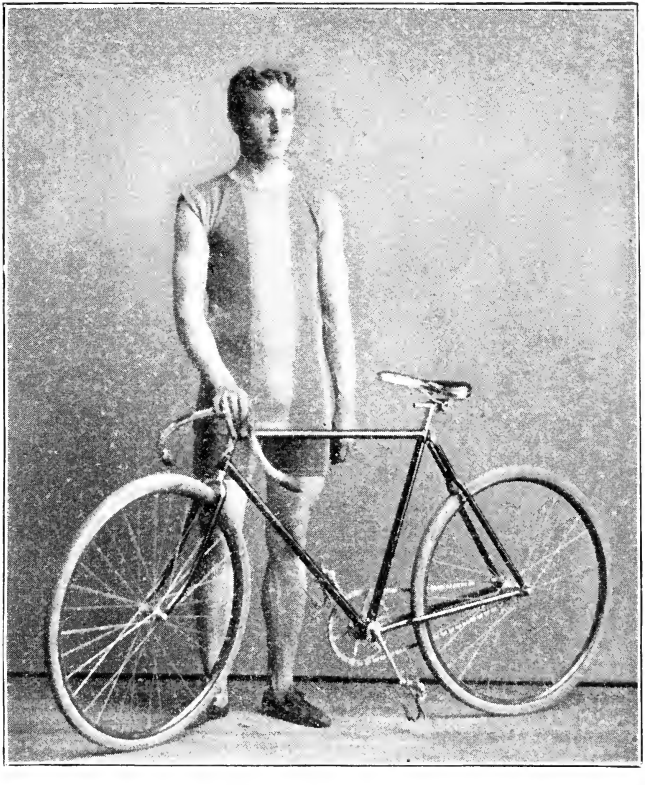
This racing style is seen to a more or less degree in all the cracks of the path. When they are up to speed they invariably lift the heel high before commencing the downward push. The main object of this is to avoid back pedaling and to get a slight upward pull on the up stroke, for by heavy cleats, toe clips and rubber bands, fastening their feet to the pedals, they are enabled to do this.

The main fault with most riders is seen in back pedaling, which the racing men are so careful to avoid. That this is so may be ascertained by anyone who will try the experiment of lifting the leg which is not engaged in pushing on the up stroke at each revolution of the cranks.

The fault with this style of pedaling is that it entails a big knee action, and is made still greater by the use of long cranks, for the longer the crank the more the knee travels. A careful inspection of photographs of the finish of races, or pictures taken of racing men in action, will show where the popular notion of pedaling is amiss for fast work.

## Bicycling as a Mental Tonic.

An alleged authority on such matters says that cycling is not restful to brain workers. The authority is probably not a cyclist or he would not make any such statement. It has been admitted by the most competent judges that a spin on a wheel, in the novice or veteran stage, is a tonic for both mind and body. How many people after a day of unusually hard work have arisen in the morning feeling all



ARTHUR GARDINER.

out of sorts and knowing that their physical and mental condition was not in order for another hard day's work? Thousands have just such experiences, and as many have decided to jump on their wheels and take a spin through the adjacent park or over suburban roads. Mental worry vanishes as if by magic. A bath and a rub-down sends the blood circulating through the body, and one starts in for another day's battle with the world, rejuvenated, content, healthy and happy. Probably a brisk walk or indulgence in almost any sort of outdoor recreation would have done almost as well, but the bicycle is there, and it offers an incentive to get out into the open air and appeals to one where some other sort of sport or recreation would not.

## The Art of Pumping up Tires.

According to a wheelman of fifteen years' experience, who is also in the bicycle trade, most cyclists are riding with their rear tires too hard. This authority says he has experimented in this direction and satisfied himself of the truth of his proposition. He had been in the habit of riding with his tire hard, and one day, feeling that he was not going so easily as he should, he stopped and released a little air. An improvement was instantly noticed. The testimony of this man of experience is simply a corroboration of a fact on which experts agree. As soon as a tire is pumped so hard that there is no yield to it the whole purpose and value of its being pneumatic are vitiated. The tire is designed to serve as an air cushion and should be used as such. The less there is interposing between the ground and the air the better, and for that reason thick and heavy tires are less resilient than the thin ones of the racing men. If a bologna sausage skin would stand the wear of the road it would make a better tire when filled with air than the casings of fabrics and rubber. The ideal condition would be, if possible, to ride with simply a ring around the rim and nothing between that and the ground. This means that in order to receive full benefit the air should be compressed to a different degree in tires of different thicknesses, but always compressed so that the rubber of the tire and the air within can yield enough to bridge over

ARTHUR A. ZIMMERMAN.

small irregularities of surface and lessen the jolt of larger obstacles. The jar of the roadway should not be taken up wholly by the springs of the saddle nor the yield of the frame. As much as possible should be taken up by the tires at the initial point. It is true that frames are being made more rigid than formerly, and the riders who habitually ride on the road with tires pumped up hard as a rock are not only causing themselves unnecessary discomfort, but are doing an injustice to their wheels. There is more vibration in the tubing of a wheel that is ridden with hard tires than in one where the tires are pumped to a reasonable pressure. Vibration in metal causes crystalization, and this weakens the metal so that it breaks. It is the crystalization due to vibration that limits the life of a wheel. Riders on springy saddles are apt to forget these points, if they know them, but the springs on the saddle do not save the frame of a wheel. It has to stand the vibratory jarring before it reaches the springs.

### Oil as a Destructive Agent.

An old-time rider of much experience gives the following advice on cleaning bicycles: "Few cyclists may be aware that oil is a great enemy to brass and steel, and accounts for the many breakages of joints of cycles which may have been in use for some time. This is usually brought about by making a practice of rubbing the machine down with an oily rag. The oil collects at the joints and gradually eats its way in parting the brass from the steel, the joint then giving away, generally with serious consequences. To clean the frame, it should be wiped over with a damp sponge and rubbed dry with a soft cloth. If this plain is carried out it adds to the life of a machine."

### Track Measurements.

Why should the cycle track be measured eighteen inches from the pole? Echo answers, Why?

This measurement had its origin in England away back at the very beginning of cycling sport. The Crystal Palace track at London was then practically the only cycle

J. B. BOWLER,
A speedy rider of Chicago.

track in the world, and it was naturally copied in certain respects as other tracks were built; and the measurement became the standard, for no reason whatever except that it happened to be the measurement first hit upon in a haphazard manner. Thus the English rule came to specify the eighteen-inch measurement and it has never been changed. The American system was as nearly as possible copied from the English and so we have the eighteen-inch specification with us to-day.

The eighteen-inch measurement is not well adapted to modern requirements and it would be well for authorities on both sides of the water to get together and consider the wisdom of adopting a universal measurement not less than three feet from the pole. If there be a fence or even a curb, the eighteen-inch placing is impracticable because of the danger of interference. The combination of curb and pedal has caused many a nasty fall and experienced racing men are never seen riding within, or exactly on the specified limit line.

It might be argued that a change of measurement would upset past records but the argument would have only a theoretical value. It is unquestionably a fact that very few records were ever made with the recordists hanging to the eighteen-inch line.

An excellent argument in favor of the three-foot standard is found in the fact that there are in this country probably 300 trotting tracks, all measured three feet from the pole, which are at times used for cycle racing. Unless temporary curbs or fences are provided at a good deal of inconvenience and expense and new surveys made, the L. A. W. cannot accept times or records made on these tracks, all of which would become available for record work if the standard were changed.

## The Heart.

There has been so much association of cycling with heart troubles that it is reasonable to presume that the discussion may have caused a great deal of unnecessary nervousness on the part of riders who belong to the "symptomatic" class of persons, of whom there are many.

JAY EATON.

The human heart is adjusted by nature to meet a variety of demands incident to the economy of the body. It was never designed to register an exact and certain number of beats at all times under the varying necessities for bodily exertion. If the heart beats a little more rapidly than usual when one ascends stairs, or hurries to catch a street car, or climbs a hill with a bicycle, it is nothing to be alarmed about, for the heart was meant to do just that very thing. The persistent climbing of steep hills, causing the heart to thump in trip-hammer style at frequent and prolonged periods, might result in strain if there were any predisposing weakness of the organ, but the hill-work that the ordinary road rider performs hurts his heart no more than it hurts his elbow.

## Why Chains Often Break.

The reasons for this trouble are various, but tradesmen hold to the opinion that it is mostly the chains on cheap wheels which have been neglected all winter that break in the spring. They are rusty and worn, and consequently weaker than they were. When taken out on the road without being cleaned or adjusted the dust gets in them and tightens them up so that an extra strain is imposed, under which they part. Another cause is the erratic pedalling of riders who have never learned how to properly manipulate their feet on a bicycle. The top stretch of the chain is allowed to slacken and is then tightened suddenly by a violent thrust. Then it snaps. Broken chains, however, are by no means the only kind of trouble common these days. The roads have been littered with wrecks of all kinds since the sun began to shine warmly and most of the accidents were to old wheels that had not been properly cared for. Tires, pulling off the rims because the bicycle had been stored in a warm room and the cement dried out; wheels buckling because the spokes have not been tightened; pedals dropping off because the nuts have not been made tight before starting out; saddles twisting; tires puncturing; grips pulling off, all these accidents have been seen frequently since the crowds have been out, and there were few that could not have been avoided had the rider attended to his machine properly.

C. W. MILLER,
Six Day Race Champion.

# QUALITIES THAT MAKE THE CHAMPION.

BY FRANK McCOLLOUGH.

What are the qualities necessary to become a successful racing cyclist? is a question that is often asked by the thousands of cyclists imbued with the belief that they are destined to become a Zimmerman or a Bald, and it is to these persons, as well as the thousands not advanced in cycling parlance to whom the writer will tell of what is essential to become a foremost figure in the racing world. The answer to the foregoing question, and one that I believe all racing men will agree upon, is contained in the following, in the order named: First, strength; second, fast wheel; third, training; fourth, confidence; fifth, headwork; sixth, trainer. These are the qualities which make the riders of championship calibre, and to each one, or any, it is an utter impossibility to ever expect to attain a height in the cycle-racing world other than a rider of mediocre ability. Cycling critics and others may dispute this claim, but a little reasoning will prove to the most skeptical that the above is correct, as I will proceed to show my readers. The first quality is

STRENGTH,

which takes precedence in all things athletic. No sane person will dispute this claim, for were this quality to be lacking, and the rider to be the possessor of the remaining five, he would still be as badly handicapped as a bird without wings, for no matter how much or how hard he trained with the best of wheels, skillful as he may be, confident and aided by wily trainers, he would find that when the sprint for home came that the stamina he lacked was the essential thing. I can recall to mind instances wherein riders have won trial heats in good style and lost the final heat to a less speedy but stronger rider, who had barely qualified in the trial heat, whilst the public believed

F. P. PRIAL,
Well-known Cycling Authority.

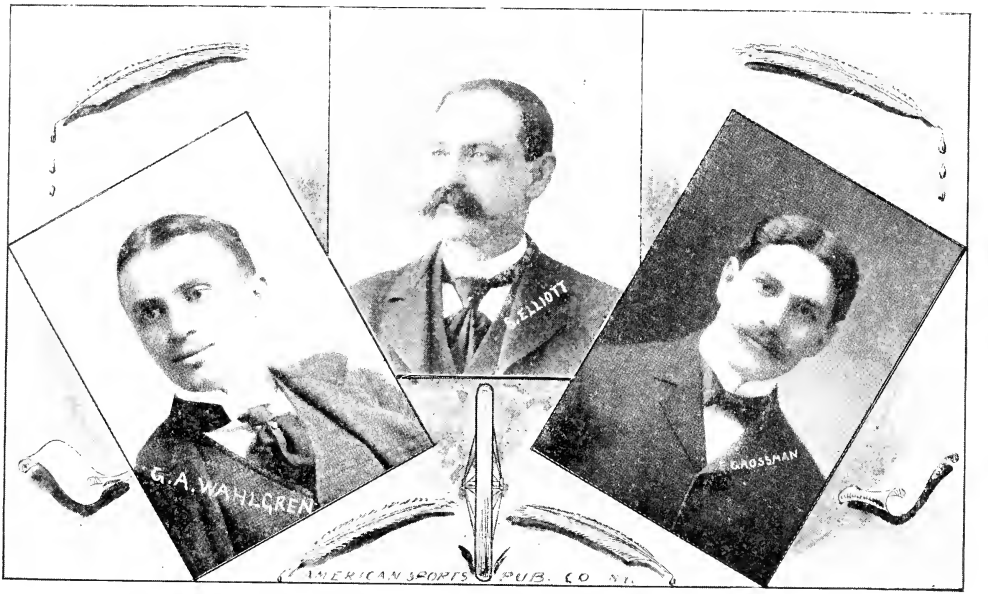
the speediest rider had won, whereas, in truth, 'twas the stronger. The reason is plain. The stronger rider has the ability to sprint the last eighth of the race, say, in 14 seconds, which enables him to qualify. The winner of the trial heat sprints in 13 2-5 seconds, which pumps (exhausts) him to such an extent that he can barely do the eighth in 14 1-5 in the final heat, while the stronger rider does 14 again, which lands him a winner. Some cyclists not agreeing with the writer on this view will point to Michael as an instance where strength is not a factor, but those who are acquainted with the Welsh rider know him as a wonderfully strong little athlete. In brief, what is it that compels a rider to stop after a fierce sprint, and the answer is that he's exhausted. Yes, that's just it exactly. If he were not tired out he would continue to sprint indefinitely. Therefore, it's it's plain that strength comes first in the making of a champion racing cyclist. This point settled, we'll turn to the second necessary quality, the

FAST WHEEL,

something that is most often overlooked by a majority of the riders, who imagine that most any good running wheel will answer. It is right there where a serious mistake is made, for there is a best in everything, and if you would win you must ride a fast wheel; by this is meant a cycle equally as speedy as your opponents ride, for to ride a wheel less speedy than your opponent gives him an advantage sufficient to defeat you in the sprint. In selecting the wheel, get one that is in accordance with your height and weight. If you are tall and heavy, ride a 23-inch frame of 24 pounds, with 44-inch wheel base; if you are but 5 feet high, and weigh only 100 to 110 pounds, ride a 20-inch, of 18 pounds, with 41½-inch wheel base. Allowing that the rider has the first two qualities, we will take up the third one, that of

TRAINING,

which is a quality that is most often abused through ignorance, either by lack of training or overtraining, most often the latter. To know how to train oneself properly and without injury is an art which few possess. Nevertheless, if a rider would become a champion he must




G. A. Wahlgren,
"Cycling West."

Sterling Elliott,
"L. A. W. Bulletin."

Emil Grossman,
"Cycling Gazette."

THREE WELL-KNOWN EDITORS.

have training, and, if possible, attain the criterion of the same. Bicycle training differs greatly from the manner of preparing for other sports. Cycle racing is fast riding, and the one and only way to train for the same is by riding the wheel, although running may be of some aid. The training should consist in long rides over the country roads daily, varying the distance from ten to seventy-five miles *ad libitum*. This road work should be commenced about the middle of March and continued for a period of two months before any track riding is done, as these long grinds taken daily give to the rider not only ease of motion, but the staying power which is so needful in the sprint. This road work should be mostly unpaced, on a fast road wheel weighing at least 27 to 28 pounds, with 1 5-8 tires, with an occasional pull-out (pacing) of fifteen miles once or twice a week. After two months of good hard road riding the rider should take to track training, which consists of a five-mile grind every day, sprinting the last eighth ; this to be followed a half hour afterward by a sprint of an eighth or a quarter mile. At this stage of the training the rider should ride the five miles at a three-minute clip, and the sprints in fifteen and thirty seconds, gradually lowering the time each day until the five miles can be ridden at a 2.20 shot and the sprints in 12 4-5 and 26 seconds, all unpaced. The training should be done in the sun, about three hours after eating, the best time being the afternoon when man is the strongest. Three weeks of track training, from the time of leaving off road work, should be sufficient to get in racing condition, after which the rider has but to ride his daily five miles, with an occasional sprint, to remain in shape. After each ride if finished the rider should be given a good rub-down, with at least a half-hour's kneading of the leg muscles, the more the better, as they should be soft and mushy, resembling jelly, for there is no speed in hard leg muscles, and without constant massage they rapidly harden. Some riders like the idea of starting to train on a monstrous high gear of 130 or 140, and lowering it until they reach their usual gear, while others commence on an extremely low one of 56, and constantly increase. The majority use but one gear continually. The best solution of the problem is to use the gear that gives you the best speed and tires you the least. The fourth quality,

CONFIDENCE,

is a factor that tends to bring many a rider to the front. To feel confident of your ability is often half the battle. Confidence in one's self, as history has shown, has made more than one man President, in fact, many a race has been won in the last fifty yards in a close struggle by a rider who was strong of the belief that he was the faster man, this feeling being sufficient to spur him to victory. Once a rider loses confidence in his ability to win he may as well hang up his racing togs and join the ranks of the upturned bars, to start in a race with the feeling that your opponents are sure to defeat you; yet, I'll do my best! is to invite almost certain defeat. Some writers confound this trait or quality with pluck, but pluck is that quality which evinces itself when the rider is well nigh exhausted and he refuses to yield to nature's demand to desist through sheer force of will power. The next quality is,

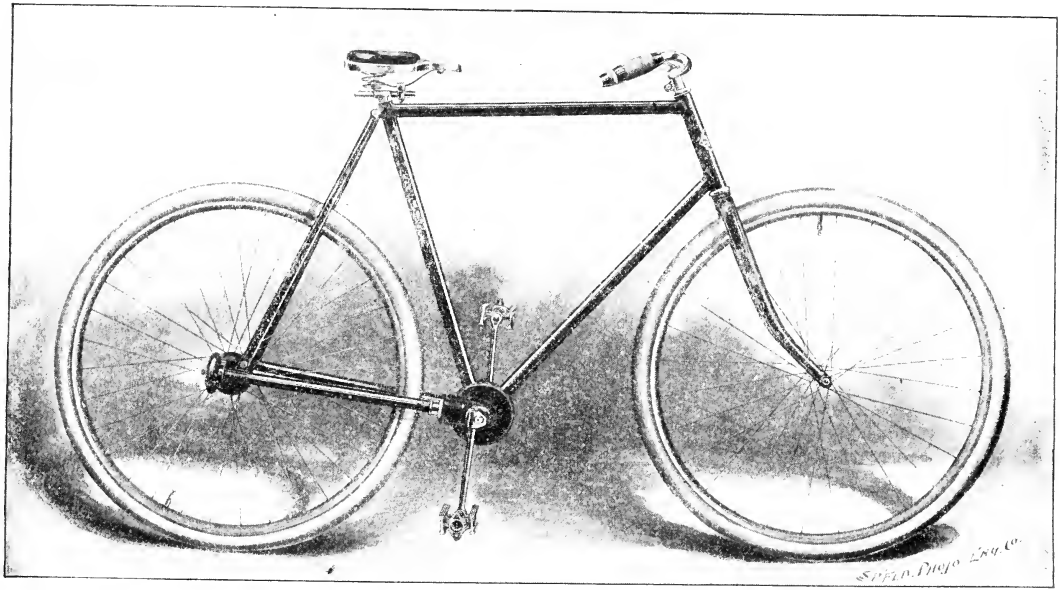
HEADWORK,

and one that most every rider believes he possesses. Tricks, craftiness, etc., all come under this title, which means the securing of an advantage over your opponents in various ways, such as forcing your opponents to set pace for three-fourths of the race while you lay back of the bunch protected from the wind. The watching of the bunch and of riders about to make a steal, and to catch their rear wheel in case they do accomplish the trick. To know when to make the jump for the final sprint. To drop back as you near the point at which the sprint usually begins and go by the bunch with a rush gaining a lead before they are aware of it.

To feign exhaustion, if in the terrific sprint, in the hope that your opponent may ease up the merest trifle in speed. Many a race has been won in this manner. With the aid of a companion pocketing a dangerous rider. To keep from being pocketed. To know when to go to the front. To watch constantly for openings and for riders who back pedal and elbow. Until the rider has mastered the above tricks or traits can he be considered proficient in headwork? The sixth and last quality in the makimg of a champion rider is the

TRAINER,

who, if he be a good one, is largely responsible for the rider's success. Much could be written about trainers and those who pose as such. The term "trainer" is is commonly interpreted as one who is an instructor who understands thoroughly the subject of which he endeavors to instruct, and yet, how many trainers of racing men are there that answer this requirement?—not one in a hundred. Every rubber and pusher-off is called a trainer. Fancy a trainer who has never ridden a wheel at all directing a rider's training, and telling him how many miles to work out and how often to practice sprinting. Seems ludicrous, doesn't it? but it's a fact, nevertheless. A trainer of a racing cyclist should be one who has done some racing in his time. He should know something of anatomy and be a man of judgment. He should be able to note a rider's condition by a glance of the eye. He should know everything about massage and its results in order to direct the rubber how to rub and knead a rider properly. Every rule in the racing book should be known to him. He should know the mechanism of a bicycle thoroughly and be able to adjust it so that the rider gets the most speed out of it. He should direct the rider in his diet. Past experience should serve to tell him when a rider is sufficiently trained. He should be able to decide whether a rider needs to be eulogized or rebuked in order to spur him on to better efforts. He should see to it that the rider's wheel is in perfect order for every race. And the rider that combines these six qualities will without doubt make a rider of the championship order. The facts stated above are the result of experience as a rider, rubber, trainer, manager, race meet promoter, cycle salesman, repairman and writer.



The Spalding Chainless

# CHAINLESS BICYCLES.

The chainless bicycle typifies a new phase in the march of cycling progress, and notwithstanding its critics, practical experience has demonstrated its superiority. The production of this machine necessitates a new and costly equipment of special machinery and tools, and the greatest accuracy and skill in its building; hence, it apparent excess in price is explained, and the uninitiated who value cost more than quality will learn from experience that a well built chainless is worth the price asked, while a poorly built one is worth no price at all, and will be a constant cause of vexation and trouble to its owner, as nothing in the bicycle line could possibly be worse than a cheaply built, unskillfully constructed piece of mechanism of the chainless type.

That the chainless bicycle has come to stay is an assured fact to those who have had opportunity to study its mechanism and test its ease of operation. Its advent represents a revolution in mechanics, particularly cycle mechanics, the results obtained with it from practical experience completely upsetting the theoretical calculations of those who so readily criticise or condemn any new idea or device on general principles, and often without recourse to that practical knowledge and experience which is so important in every mechanical enterprise, particularly in bicycle construction; but practical common sense bicycle construction has upset many theories before the advent of this new application of an old principle, and as practice demonstrates more thoroughly than theory what is good and what is bad in cycle construction, we would forcibly remind the reader that the bevel gear chainless bicycle is no experiment, but is the perfected result of mechanical skill, coupled with experience, which experience

has demonstrated the fact that, under all conditions of weather and roads, the chainless bicycle, with the power transmitted by beveled gears, is more satisfactory and practical than any other accepted type of driving mechanism.

In the chain-driven bicycle, the chain is directly responsible for much of the grief with which the rider comes in contact. It must be kept thoroughly lubricated, free from dirt, sand, and water, and requires constant care, no matter how accurately or carefully constructed. In the chainless bicycle these obstacles are removed. The gears and driving mechanism being inclosed in dust-proof cases, require practically no attention, and the smoothness of its action and ease with which the machine drives will astonish those unfamiliar with its workings. On the level, or in coasting, its superiority is manifestly apparent, and the average rider will appreciate the quick response to power applied to the pedals and the ease and rapidity with which the machine gets under way. There is no lost motion, no grinding, creaking, or jumping, as in the chain wheel, but an absolute obedience to the will of the rider, a response to his efforts that cannot be realized until the machine is ridden. In hill climbing, the result is the same, the machine responding immediately to every ounce of power applied. The gears being inclosed and perfectly lubricated water, mud, or dust have no effect upon its driving mechanism, and there is do falling off in efficiency, no matter how long may be the run, while the chain wheel friction steadily increases as the machine is ridden further towards its destination.

That the chainless bicycle had to contend with all the adverse criticisms incidental to the introduction of any new idea, is well known. Elaborate tests and bewildering tables and diagrams, based upon so-called theoretical grounds, were from time to time presented to demonstrate, if possible, to the public mind the "reason why" the chainless should not meet with public favor. But facts are facts, and these same critics are to-day endeavoring to make some sort of a chainless bicycle, and in view of this we can but reiterate that two years' practical use on the road, under any and all the varying conditions incidental to summer and winter, snow, ice, rain, mud, dust, heat and cold, has only demonstrated more strongly and forcibly the

one bright particular fact that the chainless bicycle, driven with *beveled gears*, when properly built, represents the simplest, safest, cleanest, and most durable form of transmitting power that has yet been applied to any bicycle, and that for everyday, come-as-it-may, take-it-as-you-find-it riding, the maximum speed for the minimum of effort will be found in the chainless bicycle.

## The Mechanical Features.

In the bevel gear style of chainless, of which the Spalding Bicycle is an example, the transmission of power from the crank shaft to the rear wheel is obtained by bevel gears, instead of the usual form of sprockets and chain now in generally accepted use. The mechanism consists of a series of four beveled gears used in conjunction with a tubular gear shaft, is simple in construction and can be readily taken apart and reassembled whenever necessity requires.

The main driving gear, the largest gear of the series, is fastened to the center of the crauk axle, the power being transmitted from this by a smaller intermediate gear to the tubular gear shaft running through the lower right rear fork tube, and this in turn transmits the power to the rear intermediate gear, which directly engages the gear secured to the rear wheel in place of the usual sprocket, all of which clearly shown in the illustration herewith.

The location of the main driving gear in the *centre* of the crank axle brings its position also in the centre of the crank hanger barrel, adds greatly to the appearance and symmetry of the machine, insures greater strength, and divides the strain more equally on the beaaings. The intermediate gears are securely locked to each end of the tubular gear shaft by a simple locking device, more particularly described elsewhere, which make it possible to remove and replace the gears conveniently. The tubular gear shaft rotates on ball bearings specially constructed and designed to receive the thrust of the driving gear, and transmits the power to the rear rub. The lines of the rear portion of the frame present the same appearance as in bicycles

of the ordinary chain type, the only perceptible difference being in the small aluminum case which cover the gears. In this particular the Spalding Chainless differs from all others, presenting nothing unsightly to detract from the appearance of the machine.

The method of fastening the main driving gear to the crank shaft, and the front and rear intermediate gears to the tubular driving shaft, is very original. The customary method of attaching these gears is to screw them on, but this method, we have demonstrated from experience, is impracticable, for the reason that the constant strain on these gears in hill climbing or heavy work kept screwing the gears tighter and tighter on their shafts, the result being that after a brief period of riding they became so firmly fastened that it was impossible to remove them, should necessity require, without great difficulty and the use of special tools and appliances. In the Spalding Chainless these gears are constructed with a tongue projecting from the back side of the gear. The gears fit snugly to their respective shafts, and this tongue is received in a recessed collar, which is solid with the shaft, and which prevents any rotation of the gear on its axis. The gears are then securely locked in place by an ordinary lock nut, which, when set up, makes a positive fastening which cannot work loose under any conditions, and one that can always be readily removed and adjusted.

The gears are cut by special machinery, are theoretically correct, and absolutely perfect as it is possible to make bevel gears. Each gear represents the frustum of a cone on the periphery of which the gear teeth are cut, and are so shaped that as the tooth of one gear approaches the tooth of another gear, the action is that of a fine rolling motion throughout the entire angle of contact, operating noiselessly, without slipping, grinding, or friction. The gears after being cut are carefully hardened in such a manner as prevents their being warped, twisted, or thrown out of line in the process, as the slightest variation of this nature would render them unsatisfactory in operation, if not entirely useless. After being hardened they are carefully ground on special machinery to insure the contact surface being perfectly smooth, and to secure absolute perfection in the meshing of the teeth.

## To Find Gear of Chainless.

The gear of the Spalding Chainless is found by multiplying the number of teeth on the main crank shaft gear by the number of teeth on the rear intermediate gear, and the result by the diameter of the rear wheel in inches; then divide this product by the result obtained by multiplying the number of teeth on the front intermediate gear by the number of teeth on the rear wheel gear, as for instance:—

Crank shaft gear, 40 teeth. Front intermediate gear 15 teeth,
Rear intermediate gear, 24 teeth, Rear wheel gear, 25 teeth,
28-inch wheel.

$$\frac{40\times24\times28}{15\times25} = \frac{26880}{375} = 71\tfrac{7}{25}, \text{ Gear of machine.}$$

# LONG DISTANCE RIDING.

In order to be capable of equaling the present records for long distance work, it is absolutely necessary to train for such work conscientiously under the supervision of a competent trainer, one who has common sense and is careful not to permit his charge to overwork while in training, and one who, when the time comes for the trial, is directive and has under his thumb a manageable set of pacemakers capable of going at any pace required steadily and with judgment, men who have trained just as well in their pace and pick-ups as the aspiring record-breaker. A man may be ever so good, well trained, etc., but he can never equal or come near the record if the pacee is not the best. One may ask what is meant by the best.

Machines with two men up (tandems) are not capable of equaling the one-hour professional world's record. What is needed in the way of machines for pacing are triplets, "quads" quintettes, sextettes —say one sextette, three "quads," three triplets are about right to give a rider the world's one-hour record and capable of doing over thirty miles an hour.

In order to prepare for and overcome the severe punishment attached to a ride lasting one hour, at an average pace per mile of 2:05, it is best to ride two months in all kinds of races and on all kinds of tracks, gradually increasing the distance of the races. Set much of your own pace. This gives endurance. Try an unpaced mile once a week, doing your best at each trial. This will enable you to observe your improvement. Finally, about two weeks before your trial, have pacemakers at the track you are training on begin training in conjunction with your own. Stop taking part in all races at any distance, and confine yourself to the ride in view. Ride ten miles in the morning, first two or three unpaced, then have the pacing machines drop in and pick you up. Cover the seven or eight remaining miles at a

2:08 or a 2:09 pace. Have the pacemakers practice making the pick-ups. In the afternoon cover some twenty miles at a time, paced most of the way at the rate of 2:07–2:15, finishing with a quarter-mile sprint, endeavoring at the time to best the pacing machine at the tape. Always have a thorough rub after each ride; use cold water sponge occasionally above waist to to harden the muscles. The legs must be soft and pliable. See that the legs do not cramp, and if they do, tell the trainer where, and let him rub plenty of goose grease on that part at night after taking a hot bath, rubbing plenty of liniment on in the morning, wiping clean with a rough towel. Have him pay special attention to the parts that are cramped.

No one knows what a severe test it is to body and mind to ride for one hour without first having tried it—that is, at record speed. If one feels a little nervous before the trial it will aid him to endure much, as he will ride on his nerve and probably succeed in his attempt, with good pacing. The one great difficulty in this country, and the only reason we cannot equal the foreign long distance records, is because we have not paid enough attention to pacing facilities. The success of a trial depends upon the quality of the pacemaking. The pace must be, in order that a man lasts for one hour, very steady. By this is meant that if twenty-nine miles are to be done in the hour, each mile must be at an even gait, about 2:05. If a man cannot do twenty-nine miles in the hour his schedule must be slower, in order that he should finish.

No stimulants are needed while riding. The excitement acts as a strong stimulant. All the attention of the trainer should be given to the making of good connections by the pacemakers. He should have signals known by the pacemakers that they may be slowed up when the pace is getting too fast, or more faster when too slow—in other words he must see to it that the pace is absolutely even and that the man has nothing to worry about.

After the ride is over a little stimulant can then be taken if needed. The man should be immediately covered by blankets, each part dried perfectly, keeping the cold air well away from the chest and other parts. Get the man dressed as quickly as possible, away from the track and curious eyes, to quiet, and thus give his nerves a chance to

settle, not permitting him to eat his dinner for at least an hour and a half, getting him to bed earlier than usual.

It is an established fact that there is no particular rule or stipulated routine that could be universally recommended for the guidance of a cyclist in truining. The prime reason of this is that no two men are built exactly on the same lines, and the treatment suitable to one may entirely the condition of another, so it is a case of suiting the physic to the patient's taste. However, there are a number of facts known to modern trainers which every man must stick to in order to be successful on the track.

In the spring, before doing any work at all, the stomach must be got into shape by a thorovgh physicking, which relieves the system of all bilious and troublesome matter. This leaves the body in a very weak condition, and it must be strengthened gradually by keeping very quiet and eating light food, such as milk toast, soft boiled eggs, etc., for a few days, after which time more strengthening food may be taken.

The first three days very little exercise is sufficient; for instance, three to six miles a day, at about a 3:20 to 3:30 gait. This is gradually worked down day by day, until the end of a few weeks the pace is brought down to about 2:50. The third week will show a more rapid change in the condition of the man, the miles will be rolled off at about a 2:30 to 2:35 clip, and the distance by this time will be lengthened to about nine miles each day. A little faster work may now be indulged in, and about one-half mile can be reeled off at about a one minute (paced), to show the condition of the man in regard to endurance. If he is found wanting, he must again return to plugging, while, on the other hand, if he has the required amount of endurance, he may start to sprint a short distanee.

During all this time great care should be taken not to rednce too rapidly, as this will cause the skin to become feverish, but the superfluous flesh should be turned into solid muscle rather than removed altogether. In short, no attempt should be made to reduce the man's weight below a medium point, so that at the beginning of the racing season he will have a little flesh to work on, as he will gradually be worked down during during the hard season's campaigning.

It is at this point that the trainer should get in his fine work, turning the superfluous flesh into muscle. After each work-out the man should have a thorough drying with coarse towels, followed by a most thorough massage, every muscle being worked and manipulated. The flesh on the stomach, back and loins is rolled in the fingers until the whole body seems to be covered with but a slight layer of flesh sheeting over the muscles. Care should be taken to keep the muscles of the legs soft and pliable, as there is no speed in a muscle that becomes hard.

After the body and muscles have been put in fine condition, the sprints are gradually lengthened, until the rider is able to cut a full quarter of a mile at top speed and finish strongly. Being able to do this, he is in condition to begin the season's campaign, which opens the latter part of May, and lasts until the end of October, when the record season begins.

A trainer cannot spend too much time with his man, especially after races. Every moment in this work will doubly repay rider and trainer, as the more the muscles are worked the more flexible they become and the less liable to stiffen up or bind after a sprint. The racing man cannot give himself too fully into the hands of his trainer or rely too much on the latter's judgment, provided the trainer is a competent man, as the trainer is working for himself as well as the rider, and the record of the latter's victories and defeats is the record of the trainer's work. The man in training should avoid eating pastries and all kinds of rich food. A little fruit eaten in the morning does more good than harm, and the less coffee or water taken the better.

This course of training will not apply to all men, as the constitutions of all men are not the same, but this is the course which is followed very generally.

The Christy saddle—the model with the extremely long pommel—is used by Eddie Bald and a great many more of the fastest men on the track, who say that the long pommel gives them a steadiness which they are unable to maintain with any other make of saddle.

# TRAINING.

Training is an exhaustive subject, but the principles of training are simple. The object of training is two-fold—1. To produce perfect general health; 2. To develop special powers in individual organs. To the last named branch belongs the training of the racing man, but the first is of interest to all riders. Briefly summarized, the rules for a healthy life, as propounded by a distinguished physician, are:

1. The hour of rising should be moderately early—say 7 in summer and a little later in winter.

2. A cold bath should be taken (all the year round, unless delicacy of health prevents it), preceded in summer and followed by a quarter of an hour's exercise with dumb bells or Indian clubs. After the bath, rub down briskly with a rough towel.

If a swimming bath is available, a ten or fifteen minutes' swim will supply both bath and exercise. If there is a walk to the bath, a crust of bread and a cup of milk, or a bowl of oatmeal porridge should be taken before leaving the house.

Breakfast about 8 o'clock to consist of a chop or steak, ham or bacon, and bread and butter, *thoroughly masticated.* A soft boiled egg may be taken occasionally. Potted meats and spiced dishes should be avoided. Coffee is preferable to tea.

Walk to business, if possible, and when doing so it is not advisable to hurry, for too active exercise immediately after eating is injurious.

Dinner—to be taken about 1 o'clock—a plain substantial meal of fish or meat, with vegetables and a moderate allowance of plain pudding or fruit tart. Veal, pork and all shell fish (except oysters) are to be avoided as indigestible. Among vegetables, potatoes, the flowery part of fresh cut cauliflowers and young carrots or asparagus, when in season, are recommended. Turnips, and also cabbage, unless very young and freshly cut, are to be avoided. Water should, for young men, be the only beverage.

Walk home from business when you can. Tea, with bread and butter, and fish, if desired, to be taken about six o'clock. After tea a couple of hours of active exercise in rowing, running, cycling, gymnastics or drilling, according to the taste of the individual. Supper of cold meat and bread, and to bed soon after 10. On Saturday afternoons and holidays, additional active exercise as opportunity may permit.

The quantities of food recommended for daily consumption are as follows:

| | Oz. |
|---|---|
| SOLIDS: | |
| Meat, cooked and free from bone . . . = 13 to 15 oz. of the uncooked joint. | 10 to 12 |
| Bread . . . . . | 16 |
| Potatoes, 10 oz., or cauliflowers . . . | 12 |
| Pudding or pastry . . . . . | 6 |
| FLUIDS: | |
| Coffee and milk at breakfast, about . . . | 18 |
| Water (at dinner and supper) . . . . | 22 |
| Tea . . . . . | 10 |

And as little as possible drinking between meals, unless after strong exercise. Tobacco and alcohol are to be strictly avoided, both being poisons to young men, especially those in frail health. In later life, they may, in strict moderation, be used with advantage.

A young man strictly following the above rules will, after a little perseverance, find himself in thorough general health, and in a condition to enter upon the severer course of training by which alone men can hope to fit themselves to achieve eminence in any branch of athletics. With this further preparation we have nothing to do; neither have we space to quote the scientific arguments for the rules above laid down. We may, however, mention, for the information of non-athletic readers, that the formulator of the above rules was not a mere medico, putting forth theories on a matter of which he had no practical knowledge, but was also one of the most distinguished English bicyclists of his day, having held no less than four championships (one, five, twenty-five and fifty miles) in a single year—1879—and three of them in the succeeding year. He speaks, therefore, with both scientific and practical authority, and every line which he has written on this subject is of vital interest to all who value that greatest of blessings—a sound mind in a sound body.

# HOW TO BECOME A WINNER.

BY EARL W. PEABODY.

Winner of 110 Firsts in 1897.

I hardly know what advice to give to the candidate for honors in the bicycle races, so much depends on the previous training and the natural capabilities of the man. But the following suggestions will be found useful by most young riders.

The first thing to be sought for is strength. Speed comes afterward. In most cases the man cannot begin real outdoor training until April 1, and this is early enough. Too long or too hard training is much more injurious than not enough.

I would recommend simple, light systematic exercise previous to April 1. This exercise may be of any kind, the whole object being simply to get the system into a normal healthy state. Home trainers I do not believe in.

The first of April having arrived, the candidate should begin his special training. Steady, hard work with no sprinting should be his programme at first. He will probably engage in no intercollegiate contests before the middle of May, and it is for these he must train, not for preliminary trials. About two miles at a good stiff pace, say three minutes, if he works alone, and 2:50 if he has one or two others to change pace with him, is enough work at first. There should be no sprint or attempt to pass the pacemaker at the finish of the work. This sort of work should be continued a week, and then the distance should be increased to three miles. After another week five miles should be negotiated. At the end of the third week it will be time to begin sprinting. About three one-hundred-yard sprints, with the wind, with a good rest between each ride, and then a stiff mile will do for the fourth week. The fifth week I should suggest two full eighth mile sprints, and then after a good rest a good stiff

mile with a spurt of about one hundred yards at the end of it. After five weeks the candidate should ride a hard mile, closing with a fast sprint for the entire last eighth about twice each day, substituting a quarter-mile flying start, unpaced trial for one of the miles about every other day. All work should be done under the trainer's eye and the time carefully noted. I would not dismount to rest, but remain on the wheel, riding easily. All sprints should be with the wind ; the object being to develop fast motion. No distance greater than a quarter should be attempted at full speed. There being no handicaps to be contested, nothing further than that is necessary, and such work retards the development of a man's sprint. Do not use an excessively high gear, and use a gear about six inches lower than you intend to ride during the first four weeks of training. Avail yourself of your trainer's experience. Whether he be a bicycle trainer or not, he can tell you whether you are doing too much or too little work, if he is a competent man. As to position, get a comfortable position during the first week and stick to it. Don't get your handle bars too low. Remember that your elbows will bend on occasion. Never, either in training or racing, "duck your head" so that you cannot see the whole track in front of you. You can ride just as fast without doing so. Wear stockings or long tights and plenty of other clothes on cold days, so as to run no risk of taking cold. Follow the regular training, and remember that a bicyclist, above all others, must have his stomach in perfect order if he wishes to succeed,

# THE FORM OF BICYCLE SADDLES.

## IN ITS RELATION TO THE PATHOLOGICAL EFFECTS OF CYCLING.

BY G. FRANK LYDSTON, M. D.,

Professor of Surgical Diseases of the Genito-Urinary Organs, Medical Department of the University of Illinois.

When the modern fad of bicycling first began, its importance, from a medical and surgical standpoint, was not appreciated by the medical profession, save in so far as the bicyclist presented himself, from time to time, suffering from the results of accidents experienced while riding. Since the practice of bicycling has become so universal, however, the question of both immediate and remost pathological disturbances incidental to it has assumed a position of the greatest importance. This is especially true of the genito-urinary practice—the especial field in which the disturbances produced by bicycling are most often noted. I recall that I was at first inclined to ridicule the notion that the practice of bicycling was likely to be productive of any pathological conditions that could justly be said to be peculiar to that special form of exercise. Extensive clinical experience has since taught me, however, that the bicycle must be given a very important position in the etiology of genito-urinary diseases.

The instances in which the motion of the limbs necessary to propel the bicycle is productive of injury are relatively rare. It is true that the motion *per se* is a factor that deserves consideration; but it is a matter of relatively minor importance save where some acute disease exists, in which event the objection is not to bicycling especially, but to any kind of exercise involving movements of the lower limbs.

It is not my purpose to discuss in detail the various forms of pathological disturbances that may be produced by bicycling. A few remarks anent this point would seem to be demanded, however, for the purpose of showing more clearly the practical character of the subject under consideration.

There has recently appeared in the various medical journals considerable discussion of the different varieties of disease—organic or functional—that may be produced by bicycling.

I am convinced that in many instances extreme and unwarranted deductions have been made and unreliable opinions have been formed. Thus, certain writers have claimed that acute urethritis may be produced by bicycling. I have no desire to appear dogmatic, but I must take the liberty of expressing the opinion that no amount of bicycling can possibly produce acute inflammation of the urethra. That injury of any portion of the urethra, produced in riding a wheel or in mounting or dismounting, may induce simple urethritis, is undoubtedly true, but that bicycling in itself can produce suppurative inflammation of a previously sound urethra, I do not believe. In the presence of pre-existing conditions of disease, however, bicycling may produce an acute exacerbation of chronic inflammation. This is one of the most important points for consideration by the surgeon. Careful observation of an abundance of clinical material has convinced me of the importance of this. Acute exacerbation of inflammation—aggravation of acute or chronic inflammation already existing—is very frequent. That irritation of the urethra, prostate, and bladder neck is often produced by bicycling I am firmly convinced. Irritations of the genital organs in both the male and female, which irritations may lead to chronic inflammatory trouble, are, unquestionably, often produced by bicycling. Diseased conditions of the genito-urinary organs are not only liable to be produced by bicycling, but also diseases of the associated parts. It is by no means unusual for patients suffering with hemorrhoids to complain of aggravation of their trouble due to riding a wheel. Persons previously free from hemorrhoidal trouble may develop it by bicycle riding. Varicocele may be produced in a similar manner.

A careful and unprejudiced study of the injurious results of bicycling will convince any painstaking observer that the most importance factor in the question of bicycling is, from a surgical standpoint, the conformation of the bicycle saddle. The form of the saddle determines the question of disease due to a form of exercise which, under proper limitations, is admirable in its effects and most highly to be commended. The surgical importance of this particular point is my apology for its special consideration.

The first form of saddle that was devised for the bicycle was, from a surgical standpoint, the very worst form that could have been devised. This, however, was due to the complete ignorance both of riders and the manufacturers of bicycle saddles as to the function which was to be subserved by the saddle and the still denser ignorance, if possible, upon the anatomical, physiological and disease questions involved. It was perfectly natural that bicycle riding should have been considered by the laity as almost, if not quite, identical with horseback riding, in so far as the support of the body by the bicycle saddle was concerned. The public had had much experience with the horse saddle, and it was, therefore, not surprising that the conformation of the bicycle saddle should have been made to conform to the ordinary horse saddle. The graceful lines and curves of the latter appealed very forcibly to the public as the ideal standard for conformation of the bicycle saddle. Even at the present time the layman who selects a bicycle saddle is most likely to favor that form which presents the broadest curve and conforms most nearly to his ideas of the saddle as he has formed them from his knowledge of the conformation of the horse saddle. If the superior plane of a bicycle saddle does not present the curved plane characteristic of a horse saddle, and if the bicycle saddle has no pommel, the layman will, as a rule, have none of it.

The average bicycle rider seems to think that the bicycle saddle is designed to be straddled in the same manner that he would straddle the back of a horse; when, as a matter of fact, there is the widest difference between the function of the horse saddle and the form adapted to the bicycle. In the case of a

horse saddle, however, there are such broad surfaces for the support of the body, that the weight must necessarily be equally distributed over a large area. In addition to this fact, a certain portion of the weight is borne by the thighs, the gripping action of which is familiar to every equestrian. Another point that must be considered is the fact that even in the equestrian saddle the pommel is by no means necessary, and is often dangerous. Most of the accidents produced by the saddle in equestrianism are due to the sudden impact of the body, particularly the perineum and genital region, against the pommel of the saddle. This is a fact which is sufficiently familiar, and yet the pommel idea is paramount in the minds of a large proportion of the laity and many manufacturers of bicycle saddles. The surface of the equestrian saddle is so broad and support by the pressure of the thighs is so easy, that slipping forward is not so very likely to occur unless some accident happens, such as the sudden stoppage or falling of the horse. With a bicycle saddle of similar shape, however, it is practically impossible for the rider to avoid slipping forward upon the small curved plane of the saddle, thus bringing the pommel in contact with the perineum and genital organs. The function of the bicycle saddle is not to support the weight of the rider sitting astride; on the contrary, its function is to support and balance the weight of the rider sitting squarely upon it, very much as a small chair or stool might do. Irrespective of its conformation, no bicycle saddle is rational that does not perform this function, and any other function it may be made to subserve is entirely superfluous.

The conformation of the horse saddle is so familiar that a typical illustration is hardly necessary, and yet, perhaps, it will be useful for the purpose of comparison. The saddle shown in the illustration is the form that is preferred by most equestrians.

A moment's reflection will show that the horse saddle is not only designed to meet the demand for the support and comfort of the rider, but also for the comfort of the living animal that carries the rider. It must also be made to conform to the shape of the back of the horse. It will at once be seen that there are certain conditions to be fulfilled in the structure and conforma-

tion of the horse saddle that do not exist in the case of the bicycle saddle. Ideas of the proper conformation of the bicycle, based upon that of the horse saddle, are therefore manifestly absurd, and yet the most popular saddle with the laity has hitherto been a form that is practically a horse saddle in miniature, a typical illustration of which is seen in Figures 2 and 3.

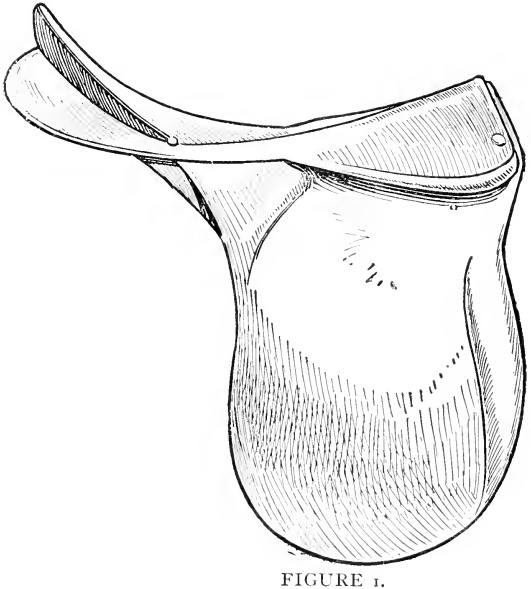


FIGURE 1.

In using this saddle the rider must necessarily sit astride it. The pommel is not only a ridiculously prominent feature of the saddle, but the curved plane of its upper surface—which is accentuated posteriorly—must necessarily force the rider forward, so that the weight of the body rests upon the sharply projecting anterior portion. Not only is the weight of the body supported largely by the front part of the saddle, but certain sensitive anatomical points are brought to bear upon it in such a manner

as to produce injury. As far as injurious pressure is concerned, the pommel of the bicycle saddle is much more objectionable than that of the horse saddle.

Figures 4 and 5 show a bicycle saddle which has been used quite extensively, and which is little short of a monstrosity from

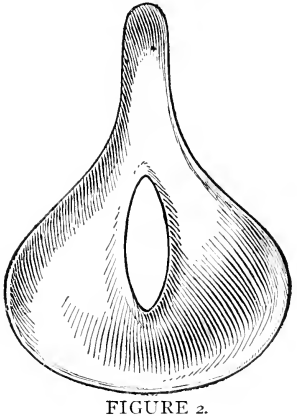


FIGURE 2.

the standpoint of anatomical adaptation. No more injurious form of bicycle saddle could well be devised.

It might be well to call attention to the fact that in these faulty forms of saddles, the injurious effects are likely to be overlooked because remote. I will admit that these faulty forms

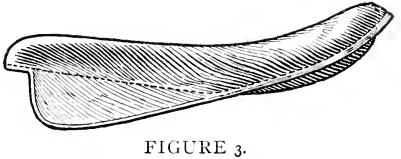


FIGURE 3.

are often comfortable enough at first, unless the rider be subjected to severe jolting, but the pressure and friction incidental to the faulty conformation produce results which are none the less definite because gradually developed. I find that in a large

proportion of instances in which bicycling has produced disturbances distinctly referable to a faulty conformation of the saddle, the subject claims that he has been perfectly comfortable while riding and has not been aware of any injurious pressure at any

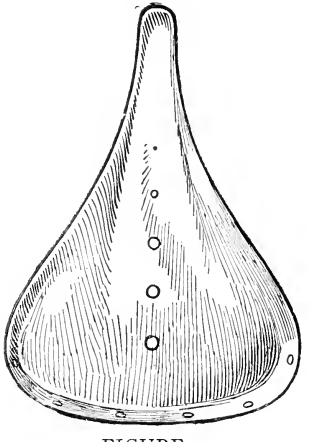


FIGURE 4.

time. This is the point that is quite likely to deceive manufacturer, rider and surgeon.

On account of the fact that many riders who are not inured to exercise of any kind, and particularly bicycling, complain of the unyielding character of the ordinary bicycle saddle, attempts

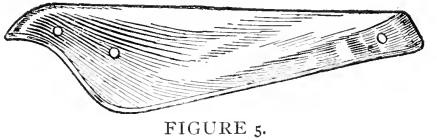


FIGURE 5.

have been made to afford a soft, yielding, and at the same time, firmly supporting cushion. The result has been the pneumatic saddle of various forms. One of these is shown in Figures 6 and 7. It is true that the average rider will find one of these

saddles a very comfortable seat at first, but the sense of insecurity and fluctuation soon becomes very annoying. In addition to this fact, the support afforded is ringlike in character, and disturbance of the circulation of the parts included within the area of pressure inevitably results. This form of bicycle saddle is especially

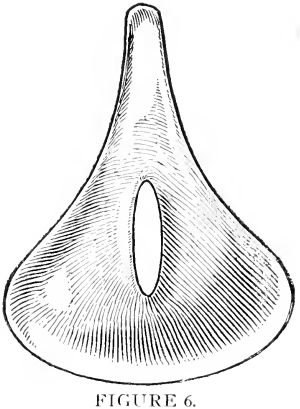


FIGURE 6.

liable to induce the development of hemorrhoidal disease. Comfortable as the pneumatic saddle may appear to be, pressure is likely, sooner or later, to develop such trouble. It is well known to the practical surgeon that while a soft cushioned chair is more comfortable to sit upon, the man or woman who sits upon it con-

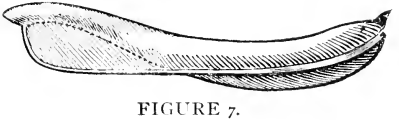


FIGURE 7.

tinuously is very likely to develop hemorrhoidal disease. The individual who sits upon a hard, unyielding chair or stool may experience a sense of fatigue and be otherwise more or less uncomfortable on account of the hard, unyielding character of the surface upon which he is sitting, but by comparison, he exceptionally

develops hemorrhoidal disease. The weight of the body in the sitting position should be supported by the tuberosities of the ischii. (Points *a*, *b*, Figure 11.) Sitting upon a soft cushion or saddle, those parts upon which the body should normally rest in the sitting posture are relieved of pressure, to a great extent, the pressure being distributed over other parts and producing more or less disturbance of the circulation and, a point which is of almost equal importance, overheating the parts.

In the special form of pneumatic saddle shown in the above illustrations, the pneumatic element of the device simply serves to throw forward the weight of the body in such a manner that the pommel of the saddle comes in contact with the perineum and associated parts, so that the saddle really defeats the object for which it was designed, namely, the prevention of injurious pressure. I will call attention to the fact that the distribution or equilization of pressure which is aimed at in pneumatic devices is not at all logical, because it protects parts which cannot possibly be injured by the pressure of the saddle, whereas the deep urethra and prostate in the male and equally sensitive parts in the female, are not only not protected absolutely from pressure, as they should be, but the measure is accentuated. In order that a bicycle saddle shall conform to anatomical demands it must fulfill the following requirements:

1. It should be so constructed that the weight of the body shall rest upon the broadest part of the saddle.

2. The weight should be supported entirely upon the tuber ischii. (Points *a*, *b*, Figure 11.)

3. The saddle should be broad enough to avoid the necessity of the anatomical points of support resting upon its edge.

4. The plane of the saddle should be as nearly level as possible, so that the relation of the saddle to the anatomical points of support of the body is the same as the supporting plane of a chair would be.

5. There should be no upward projection of the saddle anteriorly, which by any possibility can come in contact with the perineum or genitals

6. The structure of the saddle should be moderately firm, the jolting being reduced to a minimum, not by an elastic cushion, but by springs beneath the saddle.

If these requirements be fulfilled the delicate anatomical points, pressure upon which is likely to produce injury in bicycle riding, can in no way be brought in sufficient intimate relation to any part of the saddle to produce injury, either immediate or remote. The base of the saddle should be unyielding, so that the plane of support upon which the tuberosities of the ischia rest (Figure 11) cannot be forced downward by the weight of the

FIGURE 8.

body in such a manner as to bring any portion of the saddle in contact with the perineum. If the saddle be properly constructed there is no pommel or horn, properly speaking; still, if made of yielding materials, it might be possible for the anterior portion of the saddle to be impinged upon by the perineum as the base of support gave way under the pressure of the body. Inasmuch as the support should be afforded entirely to the bony prominences of the buttocks, there is no necessity for any point of support in the middle line or perineum; hence there is no necessity for upholstering the saddle at this point. Should it be uphol-

stered in the middle line it would be impossible to raise the perineum out of the way of dangerous pressure without building up the saddle to a preposterous height on either side.

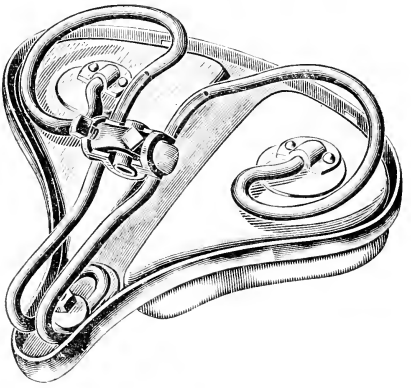


FIGURE 9.

Figures 8 and 9 show the only form of saddle which perfectly fulfils the requirements outlined. This saddle is the form designed for male riders. The projection anteriorly is not designed as a pommel in any sense whatever.

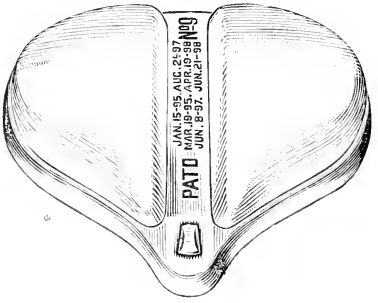



FIGURE 10.

The frame or foundation is of sheet steel, molded to the proper shape. The cushions for the support of the buttocks are

upholstered with curled hair. This is the only material possessing sufficient softness and elasticity which is at the same time so firm and unyielding as not to change its shape under the weight of the rider. The anterior projection or horn is so far below the surface of the cushions on which the buttocks set that it cannot possibly come in contact with the perineum. In riding at high speed or over very rough roads the support that the rider may derive from it by pressure of the inner surface of the

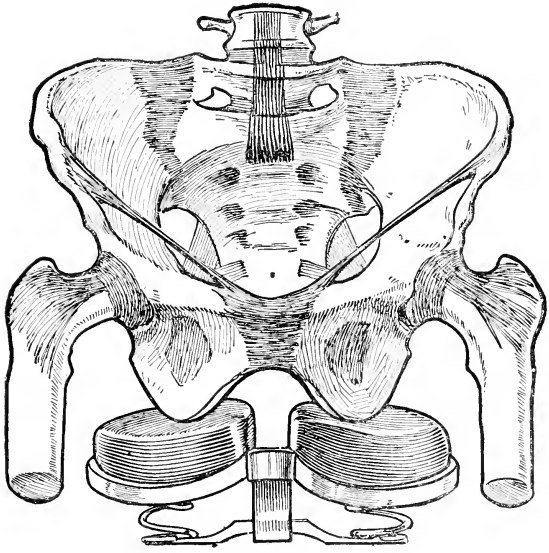


FIGURE 11.

thighs adds considerably to his security. The horn is sometimes dispensed with, as shown in Figure 10, a form designed for female riders, in whom the skirts are likely to become entangled with the horn of the saddle. The absence of the horn seems to in no way impair the comfort and utility of the saddle.

Figure 11 shows the relation of the bony pelvis to a saddle of proper conformation when the rider is seated squarely upon it.

It will be at once observed that the sub-pubic region (*c*) which corresponds to the situation of the anatomical points, pressure upon which should be avoided, clears the saddle completely. There is no possibility of injurious pressure at any point, for the weight rests entirely upon the tuberosities of the ichia (*a*, *b*.) Even should the rider slide backward, forward or laterally upon the saddle, no worse harm can result than loss of balance and

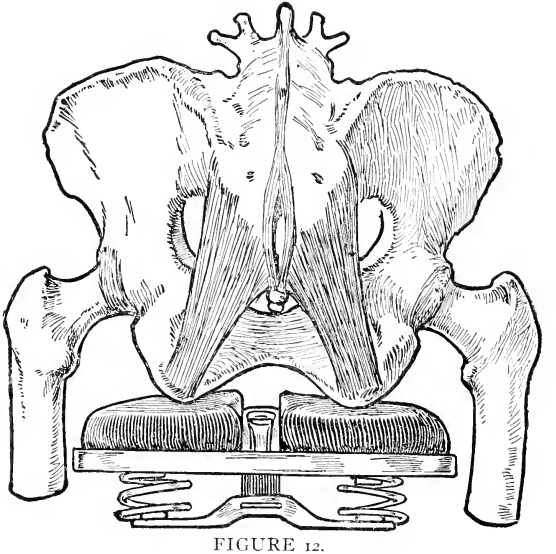


FIGURE 12.

possibly a fall from the wheel, which might occur with any form of saddle. No sensitive parts can possibly be brought in contact with any portion of the saddle in such a manner as to produce injurious pressure.

In the saddle shown in Figures 13 and 14 an effort has been made to fulfil the requirements of an anatomical saddle with the result of the conformation, which is even worse than the varieties in which the lines of the ordinary horse saddle are aimed at. In this defective saddle the cushions of support are too low,

and the base of the saddle is so yielding that the result is practically the same as if the saddle were upholstered in the median line, so far as pressure upon the perineum is concerned. Then, too, as this saddle yields to the pressure of the body, it curves up in such a manner that the unnecessary pommel is made still further injurious by being crowded forcibly against the perineum.

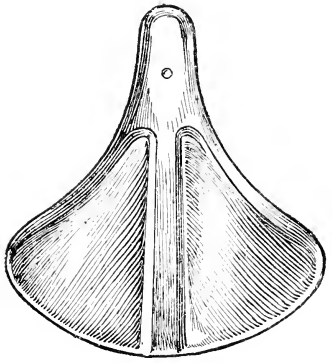


FIGURE 13.

I recognize the fact that when first used, a saddle that is rational from an anatomical standpoint is by no means as comfortable, especially to beginners, as the ordinary varieties. The pressure is concentrated, as it should properly be, upon the soft tissues covering the tuberosities of the ischiæ and is necessarily

FIGURE 14.

relatively greater than if the weight were more evenly distributed upon the saddle, as it is in the defective varieties that I have described. When the rider becomes used to the anatomical saddle, however, it is quite as comfortable as any of the other forms, and during the time he or she is becoming accustomed to riding it, no injury has resulted, the temporary discomfort being of no

moment. After a few weeks or months' riding, however, the defective saddle, which was at first quite comfortable, will have developed, in many instances, pathological diseased conditions of the organs in relation to the perineum. The rider may be even at no time aware of injurious pressure, or even the slightest discomfort, and yet inflammation of the delicate organs upon which the faulty saddle is pressed has developed. With a defective saddle there may be temporary comfort, but there is the plus element of danger; whereas, with a saddle of proper construction from an anatomical standpoint, the element of danger does not exist, although there may be temporarily some slight discomfort experienced while becoming habituated to its use.

I believe that a careful study of the various forms of saddles will lead the practical surgeon to agree with me in the foregoing conclusions. Of this much I am certain: the question of bicycle riding is a very important one to the medical man, perhaps more so than any form of outdoor exercise or physical training that has ever been devised, and if my premises be correct as regards the importance of the conformation of the bicycle saddle in relation to the development of pathological conditions, which experience has proven to occur from bicycle riding, the foregoing discussion is certainly of practical importance and worthy of serious consideration not only by the physician, but by the general public as well.

# THE BICYCLE AS A MEANS OF EXERCISE FOR WOMEN.

BY SARAH HACKETT STEVENSON, M. D.

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I am a convert; no prejudice could have been stronger than was mine against bicycling for women. The first woman I ever saw on wheels had short hair, wore bloomers, chewed gum, and leaned forward in the position of the "scorcher." The total ensemble was to me both ungraceful and disgraceful. But the more I studied into the question of exercise *per se*, the more I have become convinced that up to the present time nothing could take the place of the bicycle—what may be the inventions of the future no one can say.

The ideal exercise is one which brings into play all the important muscles of the body. Why is it important or necessary that muscles should be made to act? It is the function of muscle to contract—the muscular is the most contractile of all the tissues of the body—and if this function is not performed frequently and regularly the power is lost or enfeebled. During the contractions all the useless material in the muscle is, roughly speaking, squeezed out, also the blood vessels and lymphatics are emptied and refilled—the circulation and respiration are quickened, and much waste material finds its way out of the system through the processes of expiration from the lungs and perspiration from the skin. Thus are internal congestions relieved. In congestion that

portion of the blood which should be at the periphery of the body is using the central organs or viscera as reservoirs, where the blood stream is slow and filled with waste—the so-called alkaloids and toxins. One of the first results of active exercise is to send the blood bounding to the surface where it is, so to speak, drained or strained of its waste products; and the person exercising feels a buoyancy and sense of well-being, because his brain is supplied with clean instead of dirty blood.

Some one may now ask why this same end cannot be obtained by some kind of useful employment, real labor—why waste time and money on a bicycle when there is so much work to be done? Let us see why.

No occupation of which I know exercises all the muscles harmoniously—wood-chopping comes, perhaps, the nearest to this ideal. And thus Mr. Gladstone very scientifically preserved his health and prolonged his life, to say nothing of the judicious care he received from Mrs. Gladstone. But even in wood-chopping the muscles of the back are unduly extended, while the anterior muscles are unduly flexed, unless it were possible to swing the ax while the body is standing erect. At all events, wood-chopping can never become universal, especially among women. Other occupations exercise one set of muscles at the expense of the other, the laborers become stooped, one shoulder drops below the other, and as the body grows old we have a hemiparesis or a paraparesis, according as half the body longitudinally or horizontally has been used at the expense of the other half. Another serious objection is that nearly all labor is performed indoors in foul, dust-laden air.

It has been urged by physicians that housework for women might well take the place of the bicycle—especially have sweeping, dusting and bedmaking been urged. In my opinion brooms and feather dusters should be banished from every house—they merely transform passive into active dust, to say nothing of the germs they send flying into the air to be inhaled along with the dust. Dust, wherever it is, should be wiped up. As to the dusty process of bedmaking, even in the best regulated homes, it can

in no wise take the place of the bicycle as a health-giving exercise.

No class of people is in greater need of the benefits of the bicycle than is the laboring class. Beside the harmonious muscular development, it brings something equally precious, viz.: diversion, pleasure, of whose value I shall speak later. Instead, then, of converting all the bicycle riders into laborers—desirable as that surely would be, I should convert all laborers into bicycle riders, both for their own good and for the good of their work.

Leaving the occupations or manual labor as all inadequate to develop a perfect muscular system, let us review some of the exercises that are sought for health or amusement, or both.

Probably among all these horseback riding is the most popular. Physicians are particularly fond of prescribing it, perhaps in the same way they prescribe wine and a sea voyage—they sound well-to-do, and patients generally like horses, ships and wine. Some great physician once said the best thing for the inside of a man is the outside of a horse. Yes, but the horse does the work—the rider's exercise is passive to a great extent. It is like being swung in a hammock or taking a jolting Swedish movement out in the open air. One gets tired from riding and one's muscles become lame, not from use, but from cramped or strained position. The blood is made to circulate more freely and perspiration is induced, but not from general muscular contractions. In the case of women, the side-saddle enforces an unnatural or abnormal relation of the axis of the body to the saddle or the body of the horse. All physicians who have looked into the question advise the man's saddle both for safety and health.

For an even muscular development rowing and swimming are much nearer the ideal exercise than is horseback riding. But the trouble with all these fine things is they are exclusive. Comparatively few can enjoy such blessings as wood-chopping, riding, rowing and swimming—trees, horses, lakes and rivers do not grow in every man's back yard, to say nothing of our ten-story flats. The same is true of the various games, golf, tennis,

football, etc.—great space of ground is needed and oceans of time—while in cycling one takes to the highway, free to all, and in an hour's time has passed from the din and dirt of the city into a new, clean world, while at the same time the old world within him is becoming clean and new. Take away the bicycle and there is almost nothing left the ordinary mortal in the way of healthful, pleasurable exercise, excepting walking and running; and it is well worth our while to consider whether these may not be converted into substitutes during those periods when the weather will not permit cycling—but this is another story.

I may be asked why I do not prescribe walking instead of cycling for women. This question has been well answered by patients themselves. I was urging a lady to walk as a relief from nervous worry. "No," she replied, "walking will not do, for I think while I walk, and if I am on a wheel I cannot think—my mind, for the time being, is absolutely at rest from worries." And I thought to myself the wheel is a much better sedative than bromides or opium. Such a nepenthe is surely worth while. So much for the nerves of women.

But I have testimony from the stronger sex also. A business man, who was carrying immense financial burdens, told me that insomnia was taking hold of him—that he could sleep during the first part of the night, but awoke in the very early morning—would lie and toss and think until his brain seemed on fire, and in that state went to his office daily. I prescribed an early ride on the wheel, as it was then springtime. He made the same remark that while riding he stopped thinking, and it rested his head as no drug could possibly rest it, at the same time the exercise was doing all its fine work on his blood and muscles. After his ride, his bath, and his breakfast, he went to his office and the work there "did itself," he slept "like a top," and all the wheels within worked "like a charm" because of the wheel without.

This may be beneficial to the nerves, but how about congestions and inflammations? In acute cases people are generally too ill to sit up, much less to go out on a wheel, so we are not called

upon to decide this question. However, it is quite safe to say that all such chronic conditions are benefited by cycling—the exercise is a much better derivative than is poultice or plaster. People who have tumors or abscesses would better have them removed before attempting the wheel. The requisites on the part of the cyclist, then, do not include a perfectly sound body. One of my very first cases was given only three months of life by a lung specialist of much reputation; several hemorrhages had already taken place. The wheel and appropriate remedies have prolonged that woman's life ten years, not in a sickly, but in a strong, robust way.

One of the first requisites, whether the rider be delicate or strong, is moderation. Riding for speed subverts the very end of the exercise—it is like rowing or running or doing anything else for speed, it finally conquers the conqueror—and the most sickening, harrowing sight is the continuous race. The associations of wheelmen should do all in their power to suppress these public exhibitions of human idiocy.

Another essential, especially for women, is an appropriate dress, and there is no law against a gentleman also being appropriately dressed. I never could understand why it was necessary that a man should wear the garb of a circus clown in order to ride a wheel. In the past year or two the women have come nobly to the rescue in the matter of genteel dress. The short hair, the bloomer, and the chewing-gum have well nigh disappeared. The plain cloth, medium length, medium width gown is no hindrance, and has the further advantage and economy of being a good rainy-day gown for walking.

Another essential is to learn how to ride. Many are riding without this knowledge. There are few mechanical principles to be observed. One is to have the gearing so arranged as to have the pedal on a level with the foot when the foot is extended.

Another is to have the saddle so placed as to bring the weight of the body directly over the pedal when the latter is at its lowest point.

Still another is to lower the handlebars sufficiently to allow

the body to bend forward slightly from the hips—not stooping from the shoulders, thereby compressing the lungs. Nearly all beginners bend the spine backward from the hips. As a rule, young children, if the gearing is correct, take the normal position.

*Finally, the rider should sit, as in a chair, upon the bones or tuberosities of the pelvis, and should, on no account, allow the weight of the body to rest upon the tissues situated between these bony prominences. Indeed, the danger of serious injury resulting to children and adults from riding a saddle constructed in ignorance of correct anatomical principles is so great that it is always wise to refer the saddle question to a competent physician.**

Beside the very important question of saddle is that of the wheel itself. It must be thoroughly well-made, of the best material, and it must not be too light. Too light a wheel gains no momentum to speak of, while the jarring and vibration are very disagreeable, if not injurious. There must be a certain weight and solidity.

Finally, the wheel by its economy of money and time permits the rider to avail himself of new scenes and places, giving pleasurable sensations, the absence of which in exercise for the sake of health alone is the reason why health seldom responds to the call of such perfunctory exercise. The heart is not in it.

* The italics are ours. It is peculiarly gratifying to us to have, without solicitation on our part, the endorsement of so eminent a physician as Dr. Stevenson of the position we have always taken on the saddle question.

A. G. SPALDING & BROS.

# GAS LAMPS.

While kerosene still maintains its supremacy as a reliable illuminant —"You can get oil at any farmhouse," as some makers advertise—still, gas generated from carbide of calcium has met with favor by a large contingent of cyclists, who are ever on the lookout for a novelty.

The gas is generated by contact of water with the carbide, though each maker of lamps has his own particular manner of producing the effect.

In the "Search-Light" the water is placed *below* the carbide and fed up through a wick, just as oil is fed in a lamp. The flow of water and the consequent height of the flame, is under perfect control. No drip acetylene lantern can be adjusted one-tenth so accurately, and there are no valves to leak or get clogged up.

If, by accident, the wick is turned too high, so that too much gas is generated, a safety tube conveys the excess of gas to the flame, where it is consumed. No bad odor is caused, no increase of gas pressure—another source of danger.

An ingenious automatic arrangement covers an aperture in the water tank when the wick is turned down. Then, if the lamp is tilted, no water can get to the carbide. This is important. Neither can the vapor from the water continue to generate gas, which must either escape and smell badly, or accumulate, perhaps to a dangerous extent, in the lantern.

The rack and pinion locking device insures a tight joint when the lamp is closed together. This is what many lamps lack.

The "Search-Light" can be put together and taken apart without the slightest trouble. The lamp portion is removable from the combustion chamber. This makes it easy to clean both parts and keep the lamp in order. The lamp portion can even be used as a hand lamp without the lantern top.

The "Search-Light" gas lantern requires no special cartridge or mixture. Any lump or pulverized carbide fills the bill. This is put into the lamp in a piece of muslin; when burnt into lime it may be taken out, the cloth shaken out and used indefinitely.

# ON THE TRACK

# L. A. W. RECORDS

Compiled especially for the American Sports Publishing Co.

Form Copyrighted, 1899, by Dixie Hines.

The following table contains only those records accepted by the League of American Wheelmen in America, and the International Cyclists' Association, representing the affiliated unions in all parts of the world.

The following abbreviations are used in the table:

| | | |
|---|---|---|
| Am.—Amateur. | Qd.—Quadruplet. | Tan.—Tandem. |
| Com.—Competition. | Qt.—Quintuplet. | Trp.—Triplet. |
| Pro.—Professional. | Sex.—Sextuplet. [trials. | up.—Unpaced. |
| p.—Paced. | T.—Against time. Record | :—Foreign. World's records. |

EXAMPLE.

Tup.....P. "Against time, unpaced, by a professional."
Tp.....P. "Against time, paced, by a professional."
Com.....A. "Competition by an amateur."
Tp..... : P. "Against time, paced, by a foreigner, world's record."

## ONE-QUARTER MILE.

| Time. | Conditions. | Riders, Place and Date. |
|---|---|---|
| .29 2-5 | ....Com.....Am.... | G. F. Royce, Paterson, July 4, 1894. |
| .25 1-5 | ....Tup.....Am . | A. B. Simons, Deming, N. M., May 26, 1896. |
| .26 1-5 | ....Tup.....Pro.... | A. Gardiner, Denver, Dec. 3, 1896. |
| .24 | ....Tp .....Am.... | E. A. Moross, Detroit, Nov. 8, 1897. |
| .22 2-5 | ....Tp .....Pro.... | Maj. Taylor, Philadelphia, Nov. 5, 1898. |
| .24 1-5 | ....Tan-Tup..Am.... | Peabody-Llewellyn, Indianapolis, Aug. 12, 1898. |
| .25 4-5 | ....Tan-Tp..Am.... | Haggerty-Williams, Waltham, Nov. 2, 1894. |

## ONE-THIRD MILE.

| | | |
|---|---|---|
| .40 2-5 | ....Com.....Am.... | P. J. Bornwasser, Louisville, Sept. 4, 1897. |
| .45 | ....Com.....Pro.... | F. E. Schefski, Santa Monica, Feb. 22, 1896. |
| .33 2-5 | ....Tup.....Am.... | A. B. Simons, Deming, N. M., May 26, 1896. |
| .34 1-5 | ....Tup.....Pro.... | W. W. Hamilton, Coronado, Cal.. Mar. 2, 1896. |
| .31 1-5 | ....Tp .....Am.... | E. A. Moross, Detroit, Nov. 8, 1897. |
| .29 4-5 | ....Tp .....Pro.... | Maj. Taylor, Philadelphia, Nov. 14, 1898. |
| .41 2-5 | ....Hdc.....Am.... | G. H. Collett, Waterbury, Sept. 22, 1898. |
| .34 2-5 | ....Tan-Tup.Am.... | Finn-DeTemple, Buffalo, Oct. 27, 1897. |
| .34 2-5 | ....Tan-Tp..Am.... | Haggerty-Williams, Waltham, Nov. 2, 1896. |

## ONE-HALF MILE.

| | | | | |
|---|---|---|---|---|
| 1.00 | ....Com..... | Am.... | E. Llewellyn, | Philadelphia, July 30, 1898. |
| .56 2-5 | ....Com..... | Pro.... | W. F. Sims, | Washington, Aug. 3, 1898. |
| .58 | ....Tup... .. | Am.... | C. V. Dasey, | Denver, July 9, 1898. |
| .55 3-5 | ....Tup..... | Pro.... | W. Martin, | Indianapolis, Aug. 24, 1898. |
| .50 2-5 | ....Tp ..... | Am.... | E. A. Moross, | Detroit, Nov. 8, 1897. |
| .45 2-5 | ....Tp ..... | Pro.... | Major Taylor, | Philadelphia, Nov. 12, 1898. |
| 1.00 | ....Hdc ..... | Am.... | E. Llewellyn, | Philadelphia, July 30, 1898. |
| .52 3-5 | ....Tan-Tup.. | Am.... | Ingraham Bros., | Boston, Aug. 31, 1898. |
| .52 2-5 | ....Tan-Tup.. | Pro.... | Terrill-Taylor, | Coronado, Mar. 21, 1896. |
| .50 1-5 | ....Trp-Tup | Am.... | Omara-Walther-Pease, | Indianapolis, July 4, 1898. |
| .49 3-5 | ....Quad-Tp. | Pro.... | Phillip-Bradis-Irons-Miller, | Chicago, Oct. 12, 1897. |

## TWO-THIRDS MILE.

| | | | | |
|---|---|---|---|---|
| 1.21 | ....Com..... | Am.... | E. L. Wilson, | Washington, May 28, 1898. |
| 1.21 1-5 | ....Com..... | Pro.... | C. R. Coulter, | Denver, Oct. 3, 1896. |
| 1.21 1-5 | ....Tup..... | Am.... | J. G. Heil, | Denver, July 31, 1897. |
| 1.09 3-5 | ....Tp ..... | Am.... | H. M. Sidwell, | Cincinnati, Oct. 7, 1897. |
| .58 3-5 | ....Tp ..... | Pro.... | W. W. Hamilton, | Coronado, March 2, 1896. |
| 1.17 | ....Tan-Tup.. | Am.... | Davisworth-Mitchell, | Louisville, July 4, 1896. |

## THREE-QUARTERS MILE.

| | | | | |
|---|---|---|---|---|
| 1.37 | ....Tup..... | Am.... | F. B. Stowe, | Springfield, Oct. 20, 1894. |
| 1.18 | ....Tp ..... | Am.... | H. M. Sidwell, | Cincinnati, Oct. 5, 1897. |
| 1.08 2-5 | ....Tp ..... | Pro.... | Maj. Taylor, | Philadelphia, Nov. 16, 1898. |
| 1.25 1-5 | ....Tan-Tup.. | Pro.... | Sager-Swanbrough, | Denver, Dec. 5, 1896. |

## ONE MILE.

| | | | | |
|---|---|---|---|---|
| 1.59 | ....Com..... | Am.... | W. Robertson, | Denver, Oct. 2, 1897. |
| 1.49 | ....Com..... | Pro.... | Jimmy Michael, | Buffalo, July 23, 1897. |
| 2.05 1-5 | ....Tup..... | Am.... | H. C. Clark, | Denver, Oct. 17, 1895. |
| 1.55 4-5 | ....Tup..... | Pro.... | W. W. Hamilton, | Denver, June 18, 1898. |
| 1.43 3-5 | .. Tp ..... | Am.... | H. G. Gardiner, | Philadelphia, Sep. 11, 1897. |
| 1.31 4-5 | ....Tp ..... | Pro.... | Maj. Taylor, | Philadelphia, Nov. 16, 1898. |
| 2.08 4-5 | ....Hdc ..... | Am.... | F. L. Kramer, | Manhattan Beach, Aug. 27, 1898. |
| 2.00 2-5 | ....Hdc ..... | Pro.... | W. F. Sims, | Washington, Aug. 3, 1898. |
| 1.50 | ....Tan-Tup.. | Am.... | Joseph Hood, | Detroit, June 18, 1898. |
| 1.51 2-5 | ....Tan-Tup.. | Pro.... | Sager-Hughes, | Denver, Oct. 4, 1897. |
| 1.52 2-5 | ....Tan-Tp... | Am.... | Haggerty-Williams, | Waltham, Nov. 2, 1894. |
| 1.42 2-5 | ....Tan-Tp... | Pro.... | Fowler-Church, | Philadelphia, Nov. 6, 1897. |
| 1.55 3-5 | ....Tan-Com. | Am.... | Houseman-Collett, | Waterbury, Sept. 9, 1897. |
| 1.57 | ....Tan-Com. | Pro.... | N. & F. Butler, | Cambridge, June 5, 1897. |
| 1.54 4-5 | ....Trp-Tup.. | Am.... | Connor-Russell-Holland, | Waterbury, June 23, 1898. |
| 1.46 4-5 | ....Trp-Tup.. | Pro.... | Kiser-Johnson-Mertens, | Kalamazoo, Oct. 4, 1897. |
| 2.01 1-5 | ....Trp-Com. | Am.... | Connor-Russell-Holland, | Waterbury, July 4, 1898. |
| 2.01 1-5 | ... Trp-Hdc. | Am.... | Connor-Russell-Holland, | Waterbury, July 4, 1898. |
| 1.41 | ....Trp ..... | | McDuffee-Fowler-Church, | Phila., Oct. 26, 1897. |
| 1.40 2-5 | ....Qd-Tup.. | Pro.... | Phillips-Van Herik-Bradis-B'bridge, | Chicago, Oct. 2, 1897. |
| 1.46 2-5 | ....Qt-Tup... | Pro.... | Callahan-Butler-Pierce-Walsh-Coleman. | Cambridge, Aug. 1, 1896. |
| 1.41 1-5 | ....Sex-Tup.. | Pro.... | Saunders-Pierce-Butler-Caldwell-Crooks-Coleman | Cambridge, Sept. 26, 1896. |
| 1.49 | ....Sex-Tp.. | Pro.... | Hammond-Tarment.-McLean-Stafford-Grennan-McLean. | Philadelphia, Oct. 29, 1897 |

## TWO MILES.

| | | | | |
|---|---|---|---|---|
| 3.49 2-5 | ....Com..... | Am.... | J. Nelson, Chicago, Sept. 24, 1898. |
| 3.37 3-5 | ....Com..... | Pro.... | J. Michael, Buffalo, July 3, 1897. |
| 4.27 3-5 | ....Tup..... | Am.... | J. G. Heil, Denver, Aug. 21, 1897. |
| 4.16 | ....Tup..... | Pro.... | A. B. Hughes, Denver, July 9, 1898. |
| 3.42 4-5 | ....Tp..... | Am.... | E. L. Wilson, Washington, May 19, 1898. |
| 3.13 3-5 | ....Tp..... | Pro.... | Maj. Taylor, Philadelphia, Nov. 16, 1898. |
| 4.17 | ....Hdc..... | Am.... | Frank Kramer, Indianapolis, Aug. 13, 1898. |
| 4.09 | ....Hdc..... | Pro.... | E. C. Bald, Indianapolis, Aug. 11, 1898. |
| 4.09 4-5 | ....Tan-Com. | Am.... | Collett-Hauseman, Waterbury, July 9, 1898. |
| 4.06 2-5 | ....Tan-Com. | Pro.... | N. & F. Butler, Cambridge, July 2, 1898. |
| 4.21 2-5 | ....Tan-Tup. | Am.... | Dixon-Kraft, San Francisco, Dec. 5, 1896. |
| 3.59 4-5 | ....Tan-Tup. | Pro.... | Sager-Swanbrough, Denver, Nov. 16, 1896. |
| 4.09 4-5 | ....Tan-Hdc. | Am.... | Collett-Hauseman, Waterbury, July 29, 1898. |
| 3.40 2-5 | ....Tan-Tp... | Pro.... | Fowler-Church, Philadelphia, Nov. 6, 1898. |
| 4.17 1-5 | ....Trp-Tup.. | Am.... | Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1896. |
| 4.17 | ....Trp-Tup.. | Pro.... | Kaser-Miller-Gardiner, Belleair, March 16, 1898. |
| 3.38 3-5 | ....Trp-Tp... | Pro.... | Church-Jack-Vernier, Philadelphia, Nov. 3, 1897. |
| 3.36 2-5 | ....Qd-Tp... | Pro.... | Phillips-Boone-Turville-McCurdy. Philadelphia, Oct. 3, 1897. |
| 3.25 3-5 | ....Qd-Hdc.. | Pro.... | Becker-Mertens-Butler-Martin. Indianapolis, Aug. 10, 1898. |
| 3.40 2-5 | ....Sex-Tp... | Pro.... | Hammond-Tarment-McLean-Stafford-Grennan-McLean. Philadelphia, Oct. 29, 1897. |

## THREE MILES.

| | | | | |
|---|---|---|---|---|
| 5.44 4-5 | ....Com..... | Am.... | J. Nelson, Chicago, Sept. 24, 1898. |
| 5.28 | ....Com..... | Pro.... | J. Michael, New York, Sept. 25, 1897. |
| 7.00 2-5 | ....Tup..... | Am.... | O. B. Hachenberger, Denver, Dec. 13, 1895. |
| 6.32 4-5 | ....Tup..... | Pro.... | F. J. Titus, Philadelphia, July 2, 1898. |
| 5.53 1-5 | ....Tp..... | Am.... | Ray Duer, Buffalo, Oct. 23, 1897. |
| 5.22 4-5 | ....Tp ..... | Pro.... | J. Michael, New Orleans, Nov. 12, 1896. |
| 6.24 3-5 | ....Tan-Tup. | Am.... | Dasey-Goranflo, Denver, July 16, 1897. |
| 6.07 1-5 | .. Tan-Tup. | Pro.... | Sager-Swanbrough, Denver, Nov. 16, 1896. |
| 5.31 1-5 | ....Tan-Tp.. | Pro.... | Fowler-Church, Philadelphia, Nov. 6, 1897. |
| 6.29 | ... Trp-Tup.. | Am.... | Perrie-Gracie-O'Neill, Philadelphia, Aug. 27, 1896. |
| 6.24 | ....Trp-Tup.. | Pro.... | Kaser-Miller-Gardiner, Belleair, March 16, 1897. |
| 5.30 | ....Trp-Tp.... | Pro.... | Church-Jack-Vernier, Philadelphia, Nov. 3, 1897. |
| 5.29 2-5 | ... Quad-Tp.. | Pro.... | Phillips-Boone-Turville-McCurdy, Philadelphia, Nov. 3, 1897. |
| 5.32 3-5 | ....Qnt-Com.. | Pro .... | Sager-Watts-Von Stieg-Swanbrough-Kent, Boston, Aug. 31, 1898. |
| 5.33 2-5 | ....Sex-Tp.... | Pro.... | Hammond-Tarment-McLean-Stafford-Grennan-McLean, Philadelphia, Oct. 29, 1897. |

## FOUR MILES.

| | | | | |
|---|---|---|---|---|
| 7.38 3-5 | ....Com..... | Am.... | John Nelson, Chicago, Sept. 24, 1898. |
| 7.16 4-5 | ....Com..... | Pro.... | J. Michael, New York, Sept. 25, 1897. |
| 9.31 2-5 | .. Tup..... | Am... | O. B. Hachenberger, Denver, Dec. 13, 1895. |
| 8.50 | ... Tup..... | Pro.... | F. J. Titus, Philadelphia, July 2, 1898. |
| 7.52 | ....Tp..... | Am.... | R. Duer, Buffalo Oct. 23, 1898. |
| 7.15 | ....Tp..... | Pro.... | J. Michael, New Orleans, Nov. 12, 1896. |
| 8.36 1-5 | .... Tan-Tup. | Am.... | Dasey-Goranflo, Denver, July 16, 1897. |
| 8.17 | ....Tan-Tp... | Pro.... | Sager-Swanbrough, Denver, April 9, 1898. |
| 7.25 4-5 | ....Tan-Tp... | Pro.... | Fowler-Church, Philadelphia, Nov. 8, 1897. |
| 8.43 | ....Trp-Tup.. | Am.... | Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1896. |

| | | | |
|---|---|---|---|
| 8.29 | ....Trp-Tup..Pro.... | Kaser-Miller-Gardiner, Belleair, | March 16, 1898. |
| 7.22 3-5 | ....Trp-Tp...Pro.... | Church-Jack Vernier, Philadelphia, | Nov. 3, 1897. |
| 7.23 2-5 | ....Qud-Tp . Pro.... | Phillips-Boone-Turville-McCardy, | Philadelphia, Nov. 3, 1897. |
| 7.30 | ....Sex-Tp....Pro.... | Hammond-Tarment-McLean-Stafford, Grennan-McLean, | Philadelphia, Oct. 29, 1897. |

## FIVE MILES.

| | | | |
|---|---|---|---|
| 9.36 | ....Com.....Am.... | John Nelson, Chicago, | Sept. 24, 1898. |
| 9.05 3-5 | Com.....Pro.... | J. Michael, Cambridge, | Sept. 18, 1897. |
| 11.56 4-5 | ....Tup.....Am.... | O. B. Hackenberger, Denver, | Dec. 13, 1895. |
| 11.05 1-5 | ....Tup.....Pro.... | F. J. Titus, Philadelphia, | July 2, 1898. |
| 9.54 1-5 | ....Tp.....Am.... | C. V. Dasey, Denver, | Oct. 2, 1897. |
| 9.07 4-5 | ....Tp.....Pro.... | J. Michael, New Orleans, | Nov. 12, 1896. |
| 10.46 4-5 | ....Tan-Tup..Am.... | Dasey-Goranflo, Denver, | July 16, 1897. |
| 10.25 | ....Tan-Tup..Pro.... | Sager-Swanbrough, Denver, | April 9, 1898. |
| 9.25 2-5 | ....Tan-Tp....Pro.... | Fowler-Church, Philadelphia, | Nov. 6, 1897. |
| 10.57 1-5 | ....Trp-Tup...Am.... | Perrie-Gracey-O'Neill, Philadelphia, | Aug. 27, 1896. |
| 10.34 | ....Trp-Tup..Pro.... | Kaser-Miller-Gardiner, Belleair, | Mar. 16, 1898. |
| 9.16 3-5 | ....Trp-Tp...Pro.... | Church-Jack-Vernier, Philadelphia, | Nov. 3, 1897. |
| 9.18 2-5 | ....Quad-Tp..Pro.... | Phillips-Boone-Turville-McCurdy, | Philadelphia, Nov. 3, 1897. |
| 9.27 2-5 | ....Sex-Tp....Pro.... | Hammond-Tarment-McLean-Stafford-Grennan-McLean, | Philadelphia, Oct. 29, 1897. |

## SIX MILES.

| | | | |
|---|---|---|---|
| 11.30 | ....Com.....Am.... | John Nelson, Chicago, | Sept. 24, 1898. |
| 10.50 4-5 | ....Com.....Pro.... | J. Michael, Cambridge, | Sept. 18, 1897. |
| 13.50 1-5 | ....Tup.....Pro.... | W. W. Hamilton, Denver, | July 9, 1898. |
| 11.59 | ...Tp.....Am .... | John Nelson, Chicago, | Oct. 6, 1898. |
| 11.00 1-5 | ...Tp.....Pro.... | J. Michael, New Orleans, | Nov. 12, 1896. |
| 12.38 | ....Tan-Tup..Pro.... | Sager-Swanbrough, Denver, | Apr. 9, 1898. |
| 11.19 | ... Tan Tp..Pro.... | Fowler-Church, Philadelphia, | Nov. 6, 1897. |
| 13.12 | ....Trp-Tup..Am.... | Perrie-Gracey-O'Neill, Philadelphia, | Aug. 27, 1896. |
| 12.42 | ....Trp-Tup..Pro.... | Kaser-Miller-Gardiner, Belleair, | Mar. 16, 1898. |
| 11.14 | ....Trp-Tp...Pro.... | Church-Jack Vernier, Philadelphia, | Nov. 3, 1897. |
| 11.13 3-5 | ....Quad-Tp.Pro.... | Phillips-Boone-Turville-McCurdy, | Philadelphia, Nov. 3, 1897. |
| 11.27 2-5 | ....Sex-Tp...Pro.... | Hammond-Tarment-McLeanStafford-Grennan-McLean, | Philadelphia, Oct. 29, 1897. |

## SEVEN MILES.

| | | | |
|---|---|---|---|
| 13.25 | ....Com.....Am.... | John Nelson, Chicago, | Sept. 24, 1898. |
| 12.42 2-5 | ....Com.....Pro.... | J. Michael, Cambridge, | Sept. 18, 1897. |
| 16.10 | ....Tup.....Pro.... | W. W. Hamilton, Denver, | July 9, 1898. |
| 13.58 1 5 | ....Tp.....Am.... | John Nelson, Chicago, | Oct. 6, 1898. |
| 12 53 3-5 | ....Tp.....Pro.... | J. Michael, New Orleans, | Nov. 12, 1896. |
| 14.48 | ....Tan-Tup..Pro.... | Sager-Swanbrough, Denver, | Apr. 9, 1898. |
| 13.12 1 5 | ....Tan-Tp...Pro.... | Fowler-Church, Philadelphia, | Nov. 6, 1897. |
| 15.28 1-5 | ....Trp-Tup..Am.... | Perrie-Gracey-O'Neill, Philadelphia, | Aug. 27, 1896. |
| 14.48 | ....Trp-Tup..Pro.... | Kaser-Miller-Gardiner, Belleair, | Mar. 16, 1898. |
| 13-11 1-5 | ....Trp-Tp...Pro.... | Church-Jack-Vernier, Philadelphia, | Nov. 3, 1897. |
| 13.09 2-5 | ....Quad-Tp.Pro.... | Phillips-Boone-Turville-McCurdy, | Philadelphia, Nov. 3, 1897. |
| 13.22 3-5 | ....Sex-Tp ..Pro.... | Hammond-Tarment-McLean-Stafford-Grennan-McLean, | Philadelphia, Oct. 29, 1897. |

## EIGHT MILES.

15.21 3-5 ....Com.....Am....J. Nelson, Chicago, Sept. 24, 1898.
13.39 4-5 ... Com.....Pro....Tom Linton, Philadelphia, Aug. 6, 1898.
18.31 2-5 ....Tup.....Pro....W. W. Hamilton, Denver, July 9, 1898.
16.02 2-5 ....Tp.....Am....J. Nelson, Chicago, Oct 6, 1898.
14.46 3-5 ....Tp.....Pro....J. Michael, New Orleans, Nov. 12, 1896.
16.59 1-5 ....Tan-Tup..Pro....Sager-Swanbrough, Denver, April 9, 1898.
15.13 1-5 ....Tan-Tp...Pro....Fowler-Church, Philadelphia, Nov. 16, 1897.
17.42 3-5 ....Trp-Tup..Am....Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1896
16.58 ....Trp-Tup..Pro....Kaser-Miller-Gardiner, Belleair, Mar. 16, 1898.
15.07 3-5 ....Trp-Tp...Pro....Church-Jack-Vernier, Philadelphia, Nov. 3, 1897.
15.02 1-5 ....Quad-Tp.Pro.... { Phillips-Boone-Turville-McCurdy, } Philadelphia, Nov. 3, 1897.

## NINE MILES.

17.15 ....Com.....Am....John Nelson, Chicago, Sept. 24, 1898.
15.22 ....Com.....Pro....Tom Linton, Philadelphia, Aug. 6, 1898
20.50 ....Tup.....Pro....W. W. Hamilton, Denver, July 9, 1898.
18 05 ....Tp.....Am....John Nelson, Chicago, Oct. 6, 1898.
16.40 2-5 ....Tp.....Pro....J. Michael, New Orleans, Nov. 12, 1896.
19 12 1-5 ....Tan-Tup..Pro....Sager-Swanbrough, Denver, April 9, 1898.
17.06 3-5 ....Tan-Tp...Pro....Fowler-Church, Philadelphia, Nov. 16, 1897.
19.51 3-5 ....Trp-Tup..Am....Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1896.
19.01 ....Trp-Tup..Pro....Kaser-Miller-Gardiner, Belleair, Mar. 16, 1898.
17.01 3-5 ....Trp-Tp...Pro....Church-Jack-Vernier, Philadelphia, Nov. 3, 1897.
16.59 Quad-Tp.....Pro.... { Phillips-Boone-Turville-McCurdy, } Philadelphia, Nov. 3, 1897.

## TEN MILES.

19.13 2-5 ....Com.....Am....John Nelson, Chicago, Sept. 24, 1898.
17.04 3-5 ....Com.....Pro....Tom Linton, Philadelphia, Aug. 6, 1898.
24.19 2-5 ....Tup.....Am....A. G. Kluefer, Racine, July 2, 1897.
23.09 2-5 ....Tup.....Pro....W. W. Hamilton, Denver, July 9, 1898.
20.04 4-5 ....Tp .....Am....John Nelson, Chicago, Oct. 6, 1898.
18.33 1-5 ....Tp .....Pro....J. Michael, New Orleans, Nov. 12, 1896.
21.18 2-5 ....Tan-Tup..Pro....Sager-Swanbrough, Denver, April 9, 1898.
19.02 4-5 ....Tan-Tp...Pro....Fowler-Church, Philadelphia, Nov. 16, 1897.
22.13 1-5 ....Trp-Tup..Am....Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1896.
21.07 ....Trp-Tup..Pro....Kaser-Milller-Gardiner, Belleair, Mar. 16, 1898.
18.52 ....Trp-Tp ...Pro....Church-Jack-Vernier, Philadelphia, Nov. 3, 1897.
18.49 4-5 ....Qd-Tp.....Pro.... { Phillips-Boone-Turville-McCurdy, } Philadelphia, Nov. 3, 1897.

## ELEVEN MILES.

24.01 4-5 ....Com.....Am....F. H. Wilson, Chicago, Sept. 22, 1896.
18.49 1-5 ....Com.....Pro....Tom Linton, Philadelphia, Aug. 6, 1898.
25.31 4-5 ....Tup.....Pro....W. W. Hamilton, Denver, July 9, 1898.
22.06 ....Tp .....Am....John Nelson, Chicago, Oct. 6, 1898.
21.28 3-5 ....Tp .....Pro....Lucien Lesna, Cambridge, Aug. 14, 1897.
24.34 2-5 ....Tan-Tup..Pro....Sager-Swanbrough, Denver, April 9, 1898.
24.28 1-5 ....Trp-Tup..Am....Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1896.
23.15 ....Trp-Tup. Pro....Kaser-Miller-Gardiner, Belleair, Mar. 16, 1898.

## TWELVE MILES.

26.07 4-5 ....Com.....Am....F. H. Wilson, Chicago, Sept. 22, 1896.
20.31 3-5 ....Com.....Pro....Tom Linton, Philadelphia, Aug. 6, 1898.
27.55 2-5 ....Tup.....Pro....W. W. Hamilton, Denver, July 9, 1898.
24.17 ....Tp .....Am....John Nelson, Chicago, Oct. 6, 1898.

23.27 4-5 ....Tp .....Pro....Lucien Lesna, Cambridge, Aug. 14, 1897.
26.48 2-5 ....Tan-Tup..Pro....Sager-Swanbrough, Denver, Apr. 9, 1898.
26.25 ....Trp-Tup..Am....Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1896.
25 23 ....Trp-Tup..Pro....Kaser-Miller-Gardiner, Belleair, Mar. 16, 1898.

## THIRTEEN MILES.

28.18 ....Com .....Am....F. H. Wilson, Chicago, Sept. 22, 1896.
22.21 1-5 ....Com .....Pro....Harry Elkes, Philadelphia, Aug 6, 1898.
30.17 1-5 ....Tup.....Pro....W. W. Hamilton, Denver, July 9, 1898.
26.16 ....Tp .....Am....John Nelson, Chicago, Oct. 6, 1898.
25.22 2-5 ...Tp .....Pro....Lucien Lesna, Cambridge, Aug. 14, 1897.
29.04 ....Tan-Tup..Pro....Sager-Swanbrough, Denver, April 9, 1898.
28.02 2-5 ....Trp-Tup..Am....Perrie-Gracey-O-Neill, Philadelphia, Aug. 27, 1897.
27.31 ....Trp-Tup. Pro....Kaser-Miller-Gardiner, Belleair, Mar. 16, 1898.

## FOURTEEN MILES.

30.24 2-5 ....Com.....Am....F. H. Wilson, Chicago, Sept. 22, 1898.
24.00 4-5 ....Com.....Pro....Harry Elkes, Philadelphia, Aug. 6, 1898.
32.39 1-5 ....Tup.....Pro... W. W. Hamilton, Denver, July 9, 1898.
28.24 2-5 ....Tp .....Am....John Nelson, Chicago, Oct. 6, 1898.
27.25 2-5 ....Tp .....Pro....Lucien Lesna, Cambridge, Aug. 14, 1897.
31.18 4-5 ....Tan-Tup..Pro....Sager-Swanbrough, Denver, April 9, 1898.
31.17 2-5 ....Trp-Tup..Am....Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1896.
29.39 ....Trp-Tup..Pro....Kaser-Miller-Gardiner, Belleair, Mar. 1o, 1898.

## FIFTEEN MILES.

32.40'1-5 ....Com.....Am....F. H. Wilson, Chicago, Sept. 22, 1896.
25.38 4-5 .. Com.....Pro....Harry Elkes, Philadelphia, Aug. 6, 1898.
35.03 ....Tup.....Pro....W. W. Hamilton, Denver, July 9, 1898.
30.26 2-5 ....Tp.....Am....J. Nelson, Chicago, Oct. 6, 1898.
29.24 ....Tp.....Pro....Lucien Lesna, Cambridge, Aug. 14, 1896.
33.33 2-5 ....Tan-Tup..Pro....Sager-Swanbrough, Denver, April 9, 1898.
33.32 2-5 ....Trp-Tup..Am....Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1896.
31.50 ....Trp-Tup..Pro....Kaser-Miller-Gardiner, Belleair, Mar. 16, 1898.

## SIXTEEN MILES.

34.39 ....Com.....Am....F. H. Wilson, Chicago, Sept. 22, 1896.
27.17 3-5 ....Com..... Pro....Harry Elkes, Philadelphia, Aug. 6, 1898.
37.38 ....Tup.....Pro....W. W. Hamilton, Denver, July 9, 1898.
32.28 4-5 ....Tp.....Am....John Nelson, Chicago, Oct. 6, 1898.
31.25 2-5 ....Tp.....Pro....Lucien Lesna, Cambridge, Aug. 14, 1897.
35.49 2-5 ....Tan-Tup..Pro... Sager-Swanbrough, Denver, April 9, 1898.
35.48 4-5 ....Trp-Tup..Am....Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1896.
33.58 ....Trp-Tup..Pro....Kaser-Miller-Gardiner, Belleair, Mar. 16, 1898.

## SEVENTEEN MILES.

36.54 3-5 ....Com.....Am....F. H. Wilson, Chicago, Sept. 22, 1896.
38.58 2-5 ....Com.....Pro....Harry Elkes, Philadelphia, Aug. 6, 1898.
39.53 4-5 ....Tup.....Pro....W. W. Hamilton, Denver, July 9, 1898
34.29 ....Tp.....Am....John Nelson, Chicago, Oct. 6, 1898.
33.36 1-5 ....Tp.....Pro....Lucien Lesna, Cambridge, Aug. 15, 1897.
38.04 ....Tan-Tup..Pro....Sager-Swanbrough, Denver, April 9, 1898.
38.04 2-5 ....Trp-Tup..Am....Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1896
35.08 ....Trp-Tup..Pro....Kaser-Miller-Gardiner, Belleair, Mar. 16, 1898.

## EIGHTEEN MILES.

39.07 1-5 ....Com.....Am....F. H. Wilson, Chicago, Nov. 22, 1896.
30.39 2-5 ....Com.....Pro....Harry Elkes, Philadelphia, Oct. 6, 1898.
42.18 2-5 ....Tup.....Pro....W. W. Hamilton, Denver, Sept. 9, 1898.

36.31 ....Tp.....Am....John Nelson, Chicago, Oct. 6, 1898.
35.24 1-5 ....Tp.....Pro....Lucien Lesna, Cambridge, Sept. 14, 1897.
40.19 ....Tan-Tup.Pro....Sager-Swanbrough, Denver, April 9, 1898.
40.20 2-5 ....Trp-Tup..Am....Perrie-Gracey-O'Neill, Philadelphia, Oct. 27, 1896.
38.17 ....Trp-Tup..Pro....Kaser-Miller-Gardiner, Belleair, Mar. 16, 1898.

## NINETEEN MILES.

41.21 2-5 ....Com.....Am....F. H. Wilson, Chicago, Nov. 22, 1896.
32.20 ....Com.....Pro....Harry Elkes, Philadelphia, Oct. 6, 1898.
44.42 3-5 ....Tup.....Pro....W. W. Hamilton, Denver, Sept. 9, 1898.
38.33 ....Tp.....Am....John Nelson, Chicago, Oct. 6, 1898.
37.21 3-5 ....Tp.....Pro....Lucien Lesna, Cambridge, Aug. 14, 1898.
42.35 ....Tan-Tup.Pro....Sager-Swanbrough, Denver, April 9, 1898.
42.34 2-5 ....Trp-Tup..Am....Perrie-Graeey-O'Neill, Philadelphia, Oct. 27, 1896.
40.27 ....Tan-Tup.Pro....Kaser-Miller-Gardiner, Belleair, Mar. 16, 1898.

## TWENTY MILES.

43.37 ....Com.....Am....F. H. Wilson, Chicago, Nov. 22, 1896.
34.02 ....Com.....Pro....Harry Elkes, Philadelphia, Oct. 6, 1898.
52.07 ....Tup.....Am....A. J. Thibodeau, Chicago, Oct. 29, 1897.
47.08 2-5 ....Tup.....Pro ...W. W. Hamilton, Denver, July 9, 1898.
40.32 ....Tp.....Am....John Nelson, Chicago, Oct. 6, 1898.
39.18 4-5 ....Tp.....Pro....Lucien Lesna, Cambridge, Aug. 14, 1897.
44.53 ....Tan-Tup..Pro....Sager-Swanbrough, Denver, April 9, 1898.
44.50 1-5 ....Trp-Tup..Am ...Perrie-Gracie-O'Neill, Philadelphia, Aug. 27, 1896.
42.36 ....Trp-Tup..Pro....Kaser-Miller-Gardiner, Belleair, Mar. 16, 1898.

## TWENTY-ONE MILES.

45.53 ....Com.....Am....F. H. Wilson, Chicago, Sept. 22, 1896
35.45 ....Com.....Pro....Harry Elkes, Philadelphia, Aug. 6, 1898.
49.34 2-5 ....Tup.....Pro....W. W Hamilton, Denver, July 9, 1898.
42.35 ....Tp.....Am....John Nelson, Chicago, Oct. 6, 1898.
41.16 2-5 ....Tp.....Pro....Lucien Lesna, Cambridge, Aug. 14, 1897.
47.09 ....Tan-Tup..Pro....Sager-Swanbrough, Denver, April 9, 1898.
47.05 2-5 ....Trp-Tup..Am....Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1898.
44.45 ....Trp-Tup..Pro....Kaser-Miller-Gardiner, Belleair, March 16, 1898.

## TWENTY-TWO MILES.

48.03 3-5 ....Com.....Am....F. H. Wilson, Chicago, Sept. 22, 1896.
37.28 2-5 ....Com.....Pro... Harry Elkes, Philadelphia, Aug. 6, 1898.
52.00 3-5 ....Tup.....Pro....W. W. Hamilton, Denver, July 9, 1898.
44.46 ....Tp.....Am....John Nelson, Chicago, Oct. 6, 1898.
43.14 ....Tp.....Pro....Lucien Lesna, Cambridge, Aug. 14, 1897.
49.26 ....Tan-Tup..Pro....Sager-Swanbrough, Denver, April 9, 1898.
49.22 ....Trp-Tup..Am....Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1896.
46.55 ....Trp-Tup..Pro....Kaser-Miller-Gardiner, Belleair, March 16, 1898.

## TWENTY-THREE MILES.

48 03 2-5 ....Com.....Am....F. H. Wilson, Chicago, Sept. 22, 1896.
39.14 2-5 ....Com.....Pro....Harry Elkes, Philadelphia, Aug. 6, 1898.
54.26 2-5 ....Tup.....Pro....W. W. Hamilton, Denver, July 9, 1898.
46.42 ....Tp.....Am... John Nelson, Oct. 6, 1898.
45.15 ....Tp.....Pro....Lucien Lesna, Cambridge, Aug. 14, 1897.
51.42 ....Tan-Tup..Pro....Sager-Swanbrough, Denver, April 9, 1898.
51.37 3-5 Trp-Tup..Am... Perrie-Gracie-O'Neill, Philadelphia, Aug. 27, 1896.
49.04 ....Trp-Tup..Pro....Kaser-Gardiner-Miller, Belleair, March 16, 1898.

## TWENTY-FOUR MILES.

| | | | | |
|---|---|---|---|---|
| 52.24 | 1-5 | ....Com..... | Am.... | F. H. Wilson, Chicago, Sept. 22, 1896. |
| 40.58 | 4-5 | ....Com..... | Pro.... | Harry Elkes, Philadelphia, Aug. 6, 1898. |
| 56.53 | 1-5 | ....Tup..... | Pro.... | W. W. Hamilton, Denver, July 9, 1898. |
| 48.44 | | ....Tp..... | Am.... | John Nelson, Chicago, Oct. 6, 1898 |
| 47.11 | 4-5 | ....Tp..... | Pro.... | Lucien Lesna, Cambridge, Aug. 14, 1897. |
| 53.58 | | ....Tan-Tup.. | Pro.... | Sager-Swanbrough, Denver, April 9, 1898. |
| 53.50 | 2-5 | ... Trp-Tup.. | Am.... | Perrie-Gracie-O'Neill, Philadelphia, Aug. 27, 1896. |
| 51.44 | | ....Trp-Tup.. | Pro.... | Kaser-Gardiner-Miller, Belleair, Mar. 16, 1898. |

## TWENTY-FIVE MILES.

| | | | | |
|---|---|---|---|---|
| 50.04 | 4-5 | ....Com..... | Am.... | F. H. Wilson, Chicago, Sept. 22, 1896. |
| 42.42 | | ....Com..... | Pro.... | Harry Elkes, Philadelphia, Aug. 6, 1898. |
| 1.03.45 | | ....Tup..... | Am.... | A. J. Thibodeau, Chicago, Oct. 29, 1897. |
| 59.13 | 2-5 | ....Tup..... | Pro.... | W. W. Hamilton, Denver, July 9, 1898. |
| 50.45 | | ....Tp..... | Am.... | John Nelson, Chicago, Oct. 6, 1898. |
| 49.08 | 2-5 | ....Tp..... | Pro.... | Lucien Lesna, Cambridge, Aug. 14, 1897. |
| 56.11 | | ....Tan-Tup.. | Pro.... | Sager-Swanbrough, Denver, April 9, 1898. |
| 56.02 | 2-5 | ....Trp-Tup... | Am.... | Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1896. |
| 53.26 | | ....Trp-Tup.. | Pro.... | Kaser-Miller-Gardiner, Belleair, Mar. 16, 1898. |

## TWENTY-SIX MILES.

| | | | | |
|---|---|---|---|---|
| 1.02.54 | 2-5 | ....Com..... | Am.... | A. A. Hansen, Minneapolis, Aug. 15, 1895. |
| 48.52 | 2-5 | ....Com..... | Pro.... | J. Michael, New York, Sept. 25, 1897. |
| 52.51 | 2-5 | ....Tp ..... | Am.... | John Nelson, Chicago, Oct. 6, 1898. |
| 43.34 | | ....Tp ..... | Pro.... | Harry Elkes, Philadelphia, Aug. 6, 1898. |
| 58.23 | | ....Tan-Tup.. | Pro.... | Sager-Swanbrough, Denver, April 9, 1898. |
| 58.15 | 2-5 | ....Trp-Tup.. | Am.... | Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1896. |
| 55.36 | | ....Trp-Tup.. | Pro.... | Kaser-Miller-Gardiner, Belleair, Mar. 6, 1898. |

## TWENTY-SEVEN MILES.

| | | | | |
|---|---|---|---|---|
| 1.05.22 | 4-5 | ....Com..... | Am.... | A. A. Hansen, Minneapolis, Aug. 15, 1895. |
| 50.51 | | ....Com..... | Pro.... | J. Michael, New York, Sept 25, 1897. |
| 54.57 | | ....Tp ..... | Am.... | John Nelson, Chicago, Oct. 6, 1898. |
| 46.21 | 2-5 | ....Tp ..... | Pro.... | Harry Elkes, Philadelphia, Aug. 6, 1898. |
| 57.49 | | ....Trp-Tup.. | Pro.... | Kaser-Miller-Gardiner, Belleair, Mar. 6, 1898. |

## TWENTY-EIGHT MILES.

| | | | | |
|---|---|---|---|---|
| 1.07.45 | 1-5 | ....Com..... | Am.... | A. A. Hansen, Minneapolis, Aug. 15, 1895. |
| 52.43 | | ....Com..... | Pro.... | J. Michael, New York, Sept. 25, 1897. |
| 56.56 | | ....Tp ..... | Am.... | J. Nelson, Chicago, Oct. 6, 1898. |
| 48.09 | 4-5 | ....Tp ..... | Pro.... | Harry Elkes, Philadelphia, Aug. 6, 1898. |
| 59.54 | | ....Trp-Tup.. | Pro.... | Kaser-Miller-Gardiner, Belleair, Mar. 6, 1898. |

## TWENTY-NINE MILES.

| | | | | |
|---|---|---|---|---|
| 1.10.08 | | ....Com..... | Am.... | A. A. Hansen, Minneapolis, Aug. 15, 1895. |
| 54.38 | | ....Com..... | Pro.... | J. Michael, New York, Sept. 25, 1897. |
| 59.01 | | ....Tp ..... | Am.... | J. Nelson, Chicago, Oct. 6, 1898. |
| 49.55 | 1-5 | ....Tp ..... | Pro.... | Harry Elkes, Philadelphia, Aug. 6, 1898. |

## THIRTY MILES AND UPWARD.

| Miles. | Time. | | Conditions. | | Riders, Place and Date. |
|---|---|---|---|---|---|
| 30 | 1.12.34 | 1-5 | ..Com.... | Am.... | A. A. Hansen, Minneapolis, Aug. 15, 1895. |
| | 56.33 | | ..Com.... | Pro.... | J. Michael, New York, Sept. 25, 1897. |
| | 1.16.45 | | ..Tup.... | Am.... | A. J. Thibodeau, Chicago, Oct. 29, 1897. |
| | 51.41 | 2-5 | ..Tp ..... | Pro.... | Harry Elkes, Philadelphia, Aug. 6, 1898. |

**31**
1.15.04 2-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1897
58.30 4-5 ..Com....Pro....J. Michael, New York, Sept. 25, 1897.
53.25 4-5 ..Tp.....Pro....Harry Elkes, Philadelphia, Aug. 6, 1898.

**32**
1.17.26 1-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1895.
1.00.35 3-5 ..Com....Pro....J. Michael New York, Sept. 25, 1897.
55.12 2-5 ..Tp.....Pro....Harry Elkes, Philadelphia, Aug. 6, 1898.

**33**
1.19.42 3-5 ..Com ...Am....A. A. Hansen, Minneapolis, Aug. 15, 1897
1.02.17 4-5 ..Com... Pro....J. Michael, New York, Sept. 25, 1897.
55.58 2-5 ..Tp ....Pro....Harry Elkes, Philadelphia, Aug. 6, 1898.

**34**
1.22.13 2-5 ..Com. ..Am....A. A. Hansen, Minneapolis, Aug. 15, 1897.
58.48 1-5 ..Tp.....Pro....Harry Elkes, Philadelphia, Aug. 6, 1898.

**35**
1.24.34 4-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1897.
1.30.39 1-5 ..Com....Pro....Frank Waller, Cambridge, Aug. 16 1897.
1.30.39 2-5 ..Tup....Am....A. J. Thibodeau, Chicago, Oct. 29, 1897.
1.19.55 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**36**
1.27.15 1-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1897.
1.22.11 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**37**
1.29.49 2-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1897.
1.24.22 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**38**
1.32.35 1-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1897.
1.26.40 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**39**
1.35.08 2-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1897.
1.28.54 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**40**
1.37.34 2-5 . Com....Am... A. A. Hansen, Minneapolis, Aug. 15. 1896.
1.44.09 1-5 ..Com....Pro... Frank Waller, Cambridge, Aug. 16, 1897.
1.44.42 2-5 ..Tup.....Am....A. J. Thibodeau, Chicago, Oct. 29, 1897.
1.31.03 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**41**
1.40.24 1-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1897.
1.33.22 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**42**
1.43.07 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15. 1897.
1.35.33 .Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**43**
1.45.54 2-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15. 1896.
1.37.46 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1897.

**44**
1.48.47 1-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1897.
1.39.57 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**45**
1.51.40 ..Com....Am....A. A. Hansen, Minneapolis, Aug 15, 1897.
1.57.40 3-5 ..Com....Pro....Frank Albert, Cambridge, Aug. 16, 1897.
1.59.21 4-5 ..Tup.....Am....A. J. Thibodeau, Chicago, Oct. 29, 1897.
1.42.12 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1897.

**46**
1.54.30 2-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1897.
1.44.25 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**47**
1.57.26 3-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1897.
1.46.40 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**48**
2.00.20 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15. 1897.
1.48.54 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**49**
2.03.29 1-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1897.
1.51.06 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**50**
2.06.30 1-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1897.
2.11.09 3-5 ..Com....Pro... Frank Albert, Cambridge, Aug. 16, 1897.
2.14.05 ..Tup....Am....A. J. Thibodeau, Chicago, Oct. 29, 1897.
2.16.03 ..Tup....Pro ... John Lawson, Memphis, Nov. 17, 1896.
1.53.18 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**51** 2.09.32 2-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1897.
2.33.42 ..Tup....Am....R. Lauricks, Cambridge, July 31, 1897.
1.55.40 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**52** 2.12.37 1-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1897.
2.37.10 ..Tup....Am....R. Lauricks, Cambridge, July 31. 1897.
1.58.02 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**53** 2.15.44 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1897.
2.42.09 4-5 ..Tup....Am....R. Lauricks, Cambridge, July 31, 1897.
2.00.15 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**54** 2.18.50 2-5 ..Com....Am... A. A. Hansen, Minneapolis, Aug. 15, 1897.
2.45.25 4-5 ..Tup....Am....R. Lauricks, Cambridge, July 31, 1897.
2.02.31 ..Tp.....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**55** 2.22.00 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1895.
2.24.54 ..Com....Pro....Frank Waller, Memphis, Nov. 19, 1896.
2.48.38 2-5 ..Tup....Am....R. Lauricks, Cambridge, July 31, 1897.
2.04.45 ..Tp .....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**56** 2.25.15 1-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1895.
2.51.49 ..Tup....Am....R. Lauricks, Cambridge, July 31, 1897.
2.07.00 ..Tp .....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**57** 2.28.50 2-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1895.
2 55.01 4-5 ..Tup....Am....R. Lauricks, Cambridge, July 31, 1897.
2.09.34 ..Tp .....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**58** 2.32.47 1-5 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1895.
2.58.14 1-5 ..Tup....Am....R. Lauricks, Cambridge, July 31, 1897.
2.11.02 ..Tp .....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**59** 2.36.11 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1895.
3.01.31 1-5 ..Tup....Am....R. Lauricks, Cambridge, July 31, 1897.
2.13.53 ..Tp .....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**60** 2.39.01 ..Com....Am....A. A. Hansen, Minneapolis, Aug. 15, 1895.
2.38.46 3-5 ..Com....Pro....Frank Waller, Cambridge, Aug. 16, 1897.
3.04.45 1-5 ..Tup....Am....R. Lauricks, Cambridge, July 31, 1897.
2.16.12 ..Tp .....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**65** 2 53.42 ..Com....Am....T. A. Barnaby, Cambridge, Aug. 16, 1897.
3 20.58 4-5 ..Tup....Am....R. Lauricks, Cambridge, July 31, 1897.
2.27.41 ..Tp .....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**70** 3.07.15 2-5 ..Com....Pro....Frank Waller, Cambridge, Aug. 16, 1897.
3.37.36 ..Tup....Am....R. Lauricks, Cambridge, July 31, 1897.
2.39.21 ..Tp .....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**75** 3.21.14 4-5 ..Com....Pro....Frank Waller, Cambridge, Aug. 16, 1897.
3.53.33 -5 ..Tup....Am....R. Lauricks, Cambridge, July 31, 1897.
3.39.03 2-5 ..Tup....Pro....C. W. Miller, Chicago, Oct. 2, 1897.
2.51.20 ..Tp .....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**80** 3.35.13 2-5 ..Com....Pro....Frank Waller, Cambridge, Aug. 16, 1897
4.10.05 2-5 ..Tup....Am....R. Lauricks, Cambridge, July 31, 1897.
3.54.57 ..Tup....Pro....C. W. Miller, Chicago, Oct. 2, 1897.
3.03.12 ..Tp .....Pro....Frank Waller, Memphis, Nov. 19, 1896.

**85** 3.48.45 ..Com....Pro....Frank Waller, Cambridge, Aug. 16, 1897.
4.26.09 4-5 ..Tup....Am ... R. Lauricks, Cambridge, July 31, 1897.
4.11.15 ..Tup....Pro....C. W. Miller, Chicago, Oct. 2, 1897.
3 15.33 ..Tp .... Pro....Frank Waller, Memphis, Nov. 19, 1896.

**90** 4.03 22 ..Com....Pro....Frank Waller, Cambridge, Aug. 16, 1897.
4.43.01 1-5 . Tup....Am ...R. Lauricks, Cambridge, July 31, 1897.
4.27.00 2-5 ..Tup....Pro....C. W. Miller, Chicago, Oct. 2, 1897.
3 27.40 ..Tp . ...Pro....Frank Waller, Memphis, Nov. 19, 1896.

| | | | | | | |
|---|---|---|---|---|---|---|
| **95** | 4.18.48 | ..Com.... | Pro.... | Frank Waller, | Cambridge, | Aug. 16, 1897. |
| | 5.00.35 | ..Tup.... | Am.... | R. Lauricks, | Cambridge, | July 31, 1897. |
| | 4.42.53 1-5 | ..Tup.... | Pro.... | C. W. Miller, | Chicago, | Oct. 2, 1897. |
| | 3.39 41 | ..Tp ..... | Pro.... | Frank Waller, | Memphis, | Nov. 19, 1896. |
| **100** | 4.33.52 | ..Com.... | Pro.... | T. A. Barnaby, | Cambridge, | Aug. 16, 1897. |
| | 5.16.24 2-5 | ..Tup .... | Am.... | R. Lauricks, | Cambridge, | July 31, 1897. |
| | 4.59.27 4-5 | ..Tup .... | Pro.... | C. W. Miller, | Chicago, | Oct. 2, 1897. |
| | 3.52.14 | ..Tp ..... | Pro.... | Frank Waller, | Memphis, | Nov. 19, 1896. |
| | 3.25.21 4-5 | ..Tp ..... | : Pro.. | R. Palmer, | London, | Oct. 14, 1897. |
| **105** | 4.48.55 2-5 | ..Com.... | Pro.... | Frank Waller, | Cambridge, | Aug. 16, 1897. |
| | 3.36.22 2-5 | ..Tp ..... | : Pro.. | R. Palmer, | London, | Oct. 14, 1897. |
| **110** | 5.03.59 2-5 | ..Com.... | Pro.... | T. A. Barnaby, | Cambridge, | Aug. 16, 1897. |
| | 3.48.01 4-5 | ..Tp ..... | : Pro.. | R. Palmer, | London, | Oct. 14, 1897. |
| **115** | 5 17.35 | ..Com.... | Pro.... | Frank Waller, | Cambridge, | Aug. 16, 1897. |
| | 4.04.38 1-5 | ..Tp ..... | : Pro.. | M. Cordang, | London, | Sept. 15, 1897. |
| **120** | 5.34.59 2-5 | ..Com.... | Pro.... | T. A. Barnaby, | Cambridge, | Aug. 16, 1897. |
| | 4.15.45 2-5 | .Tp ... . | : Pro.. | M. Cordang, | London, | Sept. 15, 1897. |
| **125** | 5.30.33 | ..Com.... | Pro.... | Frank Waller, | Cambridge, | Aug. 16, 1897. |
| | 4.26.47 | ..Tp ..... | : Pro.... | M. Cordang, | London, | Sept. 15, 1897. |
| **130** | 6.06.17 | ..Com.... | Pro.... | Frank Waller, | Cambridge, | Aug. 16, 1897. |
| | 4.37.50 4-5 | ..Tp ..... | : Pro.. | M. Cordang, | London, | Sept. 15, 1897. |
| **135** | 6.23.02 1-5 | . Com.... | Pro.... | Frank Waller, | Cambridge, | Aug. 16, 1897. |
| | 4.48.49 2-5 | ..Tp ..... | : Pro.. | M. Cordang, | London, | Sept. 15, 1897. |
| **140** | 6.39.05 1-5 | ..Com.... | Pro.... | Frank Waller, | Cambridge, | Aug. 16, 1897. |
| | 5.00.11 1-5 | ..Tp ..... | : Pro.. | M. Cordang, | London, | Sept. 15, 1897. |
| **145** | 6.54.51 2-5 | ..Com.... | Pro.... | Frank Waller, | Cambridge, | Aug. 16, 1897. |
| | 6.11.43 4-5 | ..Tp ..... | . Pro.. | M. Cordang, | London, | Sept. 15, 1897. |
| **150** | 7.10.36 4-5 | ..Com.... | Pro.... | Frank Waller, | Cambridge, | Aug. 16, 1897. |
| | 5.23.01 | ..Tp ..... | : Pro.. | M. Cordang, | London, | Sept. 15, 1897. |
| **155** | 7.27.05 | ..Com.... | Pro.... | Frank Waller, | Cambridge, | Aug. 16, 1897. |
| | 5.34.31 | ..Tp ..... | : Pro.. | M. Cordang, | London, | Sept. 15, 1897. |
| **160** | 7.42.24 2-5 | ..Com.... | Pro.... | Frank Waller, | Cambridge, | Aug. 16, 1897. |
| | 5.46.10 2-5 | ..Tp ..... | : Pro.. | M. Cordang, | London, | Sept. 15, 1897. |
| **165** | 7.57.34 1-5 | ..Com.... | Pro.... | Frank Waller, | Cambridge, | Aug. 16, 1897. |
| | 5.58.12 4-5 | ..Tp ..... | : Pro.. | M. Cordang, | London, | Sept. 15, 1897. |
| **170** | 6.09.57 | " | " | " | " | " |
| **175** | 6.21.27 2-5 | " | " | " | " | " |
| **180** | 6.33.05 2-5 | " | " | " | " | " |
| **185** | 6.44.44 | " | " | " | " | " |
| **190** | 6.56.45 | " | " | " | " | " |
| **195** | 7.08.28 1-5 | " | " | " | " | " |
| **200** | 7.20.27 | " | " | " | " | " |
| **205** | 7.32.13 2-5 | " | " | " | " | " |
| **210** | 7.44.48 4-5 | " | " | " | " | " |
| **215** | 7.56.39 2-5 | " | " | " | " | " |
| **220** | 8.08.53 4-5 | " | " | " | " | " |
| **225** | 8.20.28 4-5 | " | " | " | " | " |
| **230** | 8.32.51 | " | " | " | " | " |
| **235** | 8.45.02 | " | " | " | " | " |
| **240** | 8.57.09 2-5 | " | " | " | " | " |

| | | | | | | |
|---|---|---|---|---|---|---|
| **245** | 9.09.00 4-5 | .. Tp ..... | : Pro.. | M. Cordang, | London, | Sept. 15, 1897. |
| **250** | 9.21.05 1-5 | " | " | " | " | " |
| **255** | 9.32.56 4-5 | " | " | " | " | " |
| **260** | 9.44.32 4-5 | " | " | " | " | " |
| **265** | 9.56.38 1-5 | " | " | " | " | " |
| **270** | 10.08.24 | " | " | " | " | " |
| **275** | 10.20.54 3-5 | " | " | " | " | " |
| **280** | 10.32.58 2-5 | " | " | " | " | " |
| **285** | 10.45.05 2-5 | " | " | " | " | " |
| **290** | 10.56.36 2-5 | " | " | " | " | " |
| **295** | 11.09.08 3-5 | " | " | " | " | " |
| **300** | 11.20.25 2-5 | " | " | " | " | " |
| **305** | 11.31.47 2-5 | " | " | " | " | " |
| **310** | 11.43.27 3-5 | " | " | " | " | " |
| **315** | 11.54.48 2-5 | " | " | " | " | " |
| **320** | 12 13.36 2-5 | " | " | " | " | " |
| **325** | 12.25.03 2-5 | " | " | " | " | " |
| **330** | 12.36.17 2-5 | " | " | " | " | " |
| **335** | 12.47.28 4-5 | " | " | " | " | " |
| **340** | 12.59.16 2-5 | " | " | " | " | " |
| **345** | 13.11.11 1-5 | " | " | " | " | " |
| **350** | 13.22.01 3-5 | " | " | " | " | " |
| **355** | 13.33.50 1-5 | " | " | " | " | " |
| **360** | 13.45.46 4-5 | " | " | " | " | " |
| **365** | 13.56.39 3-5 | " | " | " | " | " |
| **370** | 14.07.59 4-5 | " | " | " | " | " |
| **375** | 14.19.50 2-5 | " | " | " | " | " |
| **380** | 14.31.19 3-5 | " | " | " | " | " |
| **385** | 14.42.37 3-5 | " | " | " | " | " |
| **390** | 14.54.45 2-5 | " | " | " | " | " |
| **395** | 15.07.15 1-5 | " | " | " | " | " |
| **400** | 15.18.47 | " | " | " | " | " |
| **405** | 15.30.00 | " | " | " | " | " |
| **410** | 15.41.00 3-5 | " | " | " | " | " |
| **415** | 15.53.23 3-5 | " | " | " | " | " |
| **420** | 16.04.21 1-5 | " | " | " | " | " |
| **425** | 16.15.31 4-5 | " | " | " | " | " |
| **430** | 16.26.13 3-5 | " | " | " | " | " |
| **435** | 16.37.37 | " | " | " | " | " |
| **440** | 16.55.35 | " | " | " | " | " |
| **445** | 17.06.46 4-5 | " | " | " | " | " |
| **450** | 17.18.10 2-5 | " | " | " | " | " |
| **455** | 17.29.55 | " | " | " | " | " |
| **460** | 17.40.58 2-5 | " | " | " | " | " |
| **465** | 17.52.39 4-5 | " | " | " | " | " |

| | | | | | | |
|---|---|---|---|---|---|---|
| **470** | 18.03.38 2-5 | .. Tp ..... | : Pro.. | M. Cordang, | London, | Sept. 15, 1897. |
| **475** | 18.16.00 3-5 | " | " | " | " | " |
| **480** | 18.27.46 4-5 | " | " | " | " | " |
| **485** | 18.40.03 1-5 | " | " | " | " | " |
| **490** | 18.52.36 2-5 | " | " | " | " | " |
| **495** | 19.04.53 3-5 | " | " | " | " | " |
| **500** | 19.17.28 2-5 | " | " | " | " | " |
| **600** | 23.26.34 1-5 | " | " | " | " | " |

## HOUR RECORDS.

| Hours. | Distance. | Conditions. | Rider, Place and Date. |
|---|---|---|---|
| **5** | 139 m., 600 yds. | .. Tp... : Pro... | M. Cordang, London, Sept. 15, 1897. |
| **6** | 165 " 1,300 " | " " " | " " " |
| **7** | 191 " 720 " | " " " | " " " |
| **8** | 216 " 760 " | " " " | " " " |
| **9** | 241 " 280 " | " " " | " " " |
| **10** | 266 " 790 " | " " " | " " " |
| **11** | 291 " 567 " | " " " | " " " |
| **12** | 317 " 600 " | " " " | " " " |
| **13** | 340 " 575 " | " " " | " " " |
| **14** | 366 " 845 " | " " " | " " " |
| **15** | 392 " 126 " | " " " | " " " |
| **16** | 417 " 1,715 " | " " " | " " " |
| **17** | 442 " 25 " | " " " | " " " |
| **18** | 468 " 590 " | " " " | " " " |
| **19** | 493 " 130 " | " " " | " " " |
| **20** | 517 " 660 " | " " " | " " " |
| **21** | 539 " 1,155 " | " " " | " " " |
| **22** | 563 " 775 " | " " " | " " " |
| **23** | 587 " 660 " | " " " | " " " |
| **24** | 616 " 340 " | " " " | " " " |

## HOUR RECORDS.

| Hours. | Distance. | Conditions. | Riders, Place and Date. |
|---|---|---|---|
| **1** | 27 m., 1,540 yds. | .. Com..... Am.. | C. T. Earl, Brooklyn, Nov. 8, 1898. |
| | 31 " 1,450 " | .. Com..... Pro.. | J. Michael, New York, Sept. 25, 1897. |
| | 25 " 600 " | .. Tup..... Pro.. | W. W. Hamilton, Denver, July 9, 1898. |
| | 29 " 840 " | .. Tp..... Am.. | J. Nelson, Chicago, Oct. 6, 1898. |
| | 34 " 1,220 " | .. Tp..... Am.. | H. D. Elkes, Philadelphia, Aug. 6, 1898. |
| | 28 " 1,292 " | .. Tan-Tup.. Pro.. | Sager-Swanbrough, Denver, April 9, 1898. |
| | 26 " 1,373 " | .. Trp-Tup.. Am.. | Perrie-Gracey-O'Neill, Philadelphia, Aug. 27, 1896. |
| | 28 " 75 " | .. Trp-Tup.. Pro.. | Kaser-Miller-Gardiner, Belleair, Mar. 16, 1898, |
| **2** | 43 " 1,320 " | .. Tup..... Pro.. | C. W. Miller, Chicago, Oct. 2, 1897. |
| **3** | 62 " 1,320 " | .. Tup..... Pro.. | " " " |
| **4** | 81 " 1,100 " | .. Tup..... Pro.. | " " " |
| **5** | 100 " 32 " | .. Tup..... Pro.. | " " " |
| **24** | 323 " | .. Tup..... Pro.. | S. G. Meixell, Denver, July 30-31, 1897. |

# MIDDLE DISTANCE PACED RACES.

During the past season middle distance paced races occupied the most conspicuous positions on the racing programme. With the native riders there were many of the most famous foreigners to enter into competition, and this style of sport became immensely popular.

The "Big Six," as McDuffee, Michael, Linton, Taylore, Elkes and the colored rider, "Major" Taylor, were called, were the most successful riders in this class, although Martin, Gibson, Titus, Starbuck, Hoyt, Bourotte, Church, Vernier, Johnson, Barnaby and a host of others did meritorious work during the season. The individual records of the "Big Six," however, represent the choicest races run during the season. Of the select, Eddie McDuffee ranks first, without a defeat, while Linton, Michael, Elkes, Taylor and the French youth, Edouard Taylore, follow in the order named.

EDDIE McDUFFEE, AMERICAN.

| Date. | Place. | Distance. | Opponent. | Time. | Result. |
|---|---|---|---|---|---|
| May 14 | Boston | 15 | F. J. Titus | 27.09 3-5 | Won. |
| May 30 | Bridgeport | 10 | F. C. Hoyt | 18.48 3-5 | Won. |
| June 11 | New York | 15 | F. C. Hoyt | 27.44 2-5 | Won. |
| June 17 | Boston | 30 | Maj. Taylor | 55.09 1-5 | Won. |
| July 2 | Boston | 15 | Jimmy Michael | 26.30 2-5 | Won.* |
| July 4 | Bridgeport | 2 1-4 | F. C. Hoyt | 12.05 | Won. |
| July 6 | Philadelphia | 15 | Henry Cissac | 27.00 4-5 | Won. |
| July 16 | Providence | 3 1-6 | H. B. Hills | ... | Won. |
| Aug. 1 | Boston | 20 | E. Taylore | 34.54 | Won. |
| Aug. 6 | Philadelphia | 25 | Jimmy Michael | 45.25 1-5 | Won.† |
| Aug. 13 | New York | 25 | E. Taylore | 50.45 4-5 | Won. |
| Aug. 31 | Boston | 10 | Frank Butler | 20.36 4-5 | Won. |
| Sept. 5 | Boston | 2 1-2 | W. E. Becker | 4.58 3-5 | Won. |
| Oct. 13 | Atlanta | 15 | Repine-Walthour | 33.11 3-5 | Won. |
| Oct. 24 | Atlanta | 20 | Frank Starbuck | 43.04 3-5 | Won. |

* Michael fell at three miles while on even terms.

† Referee's decision. Michael won by thirty yards, but disqualified for breach of agreement.

## TOM LINTON, WELSH.

| Date. | Place. | Distance. | Opponent. | Time. | Result. |
|---|---|---|---|---|---|
| May 30 | Waltham | 30 | Harry Elkes | 56.50 1-5 | Won. |
| June 4 | Springfield | 15 | Fred Titus | 29.18 | Lost. |
| June 18 | New York | 30 | E. Taylore | 55.23 | Won. |
| June 25 | New York | 20 | Fred Titus | 36.59 4-5 | Won. |
| July 6 | Philadelphia | 30 | E. Taylore | 53.10 | Won. |
| July 16 | New York | 20 | Jimmy Michael | 35.18 1-5 | Won. |
| July 23 | New York | 25 | Jimmy Michael | 46.00 3-5 | Lost. |
| Aug. 6 | Philadelphia | 25 | Harry Elkes | 42.42 | Lost. |
| Sept. 5 | New York | 1 | Jimmy Michael | —— | Lost.* |

* Lost.

## JIMMY MICHAEL, WELSH.

| Date. | Place. | Distance. | Opponent. | Time. | Result. |
|---|---|---|---|---|---|
| Jan. 1 | New York | 25 | E. Taylore | 51.54 2-5 | Won. |
| July 2 | Boston | 15 | Eddie McDuffee | 26.30 2-5 | Lost.* |
| July 16 | New York | 20 | Tom Linton | 35.18 1-5 | Lost. |
| July 23 | New York | 25 | Tom Linton | 46.00 3-5 | Won. |
| Aug. 6 | Philadelphia | 25 | Eddie McDuffee | 45.25 1-5 | Lost.† |
| Aug. 11 | Baltimore | 15 | Fred Titus | 28.48 1-5 | Won. |
| Aug. 24 | Asbury Park | 15 | L. Lefferson | 29.36 | Won. |
| Aug. 27 | New York | 1 | Major Taylor | 1.44 1-5 | Won.†† |
| Aug. 27 | New York | 1 | Major Taylor | 1.41 2-5 | Lost.*a* |
| Aug. 27 | New York | 1 | Major Taylor. | 1.43 2-5 | Lost.*b* |
| Sept. 5 | New York | 1 hr. | Tom Linton | —— | Won.*c* |
| Sept. 10 | New York | 20 | Major Taylor | 35.42 4-5 | Won. |

* Michael fell at three miles while on even terms.

† Referee's decision. Michael won by thirty yards, but was disqualified for violation of articles of agreement.

†† Taylor quit. *a* Michael quit. *b* Michael quit. *c* Linton quit.

## HARRY ELKES, AMERICAN.

| Date. | Place. | Distance. | Opponent. | Time. | Result. |
|---|---|---|---|---|---|
| Jan. 1 | New York | 1 1-10 | Jas. Warburton | 2.47 1-5 | Won. |
| Jan. 24-29 | Pittsburg | 72 hrs. | Louis Gimm | —— | Won. |
| Feb. 5 | Pittsburg | 25 | Louis Gimm | 1.02.50 | Won. |
| Apr. 19 | Boston | 100 | Tom Barnaby | 2.20.59 3-5 | Won.* |
| May 21 | Waltham | 5 1-2 | Arthur Porter | 12.55 3-5 | Won. |
| May 30 | Waltham | 30 | Tom Linton | 56.50 1-5 | Lost. |
| June 11 | Providence | 25 | Monte Scott | 52.00 2-5 | Won. |
| June 25 | Boston | 50 | William Martin | 1.48.25 | Lost. |
| Aug. 6 | Philadelphia | 25 | Tom Linton | 42.42 | Won. |
| Aug. 15 | Washington | 10 | A. C. Moran | 17.34 3-5 | Won. |
| Oct. 7 | Baltimore | 50 | Frank Waller | 1.47.30 3-5 | Won. |

* Race stopped at 58 miles.

## "MAJOR" TAYLOR, AMERICAN.

| Date. | Place. | Distance. | Opponent. | Time. | Result. |
|---|---|---|---|---|---|
| June 17 | Boston | 30 | Eddie McDuffee | 55.09 1-5 | Lost. |
| June 18 | New York | 1 | Jaap Eden | 2.13 1-5 | Lost. |
| June 18 | New York | 1 | Jaap Eden | 3.09 2-5 | Won. |
| June 18 | New York | 1 | Jaap Eden | 2.38 4-5 | Won. |
| Aug. 27 | New York | 1 | Jimmy Michael | 1.44 1-5 | Lost.* |
| Aug. 27 | New York | 1 | Jimmy Michael | 1.43 2-5 | Won.† |
| Aug. 27 | New York | 1 | Jimmy Michael | 1.41 2-5 | Won.† |
| Sept. 10 | New York | 20 | Jimmy Michael | 35.42 4-5 | Lost. |
| Sept. 22 | Waterbury | 1 | Howard Freeman | 2.26 | Won. |
| Sept. 22 | Waterbury | 1 | Howard Freeman | 2.25 | Won. |

* Taylor quit. † Michael quit.

## EDOUARD TAYLORE, FRENCH.

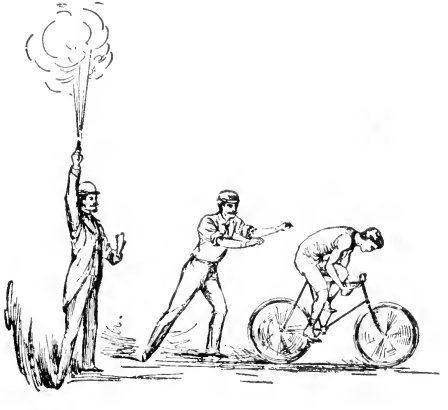
| Date. | Place. | Distance. | Opponent. | Time. | Result. |
|---|---|---|---|---|---|
| Jan. 1 | New York | 25 | Jimmy Michael | 51.54 2-5 | Lost. |
| Jan. 15 | Philadelphia | 20 | Frank Starbuck | 45.03 | Lost.* |
| May 28 | Philadelphia | 20 | Frank Starbuck | 37.49 3-5 | Won. |
| May 30 | Philadelphia | 20 | Joe Vernier | 37.13 | Won. |
| June 18 | New York | 30 | Tom Linton | 55.23 | Lost. |
| June 22 | Rochester | 15 | W. E. O'Leary | 28.32 | Won. |
| June 24 | Buffalo | 15 | C. W. Miller | 28.14 | Won. |
| July 6 | Philadelphia | 30 | Tom Linton | 53.10 | Lost. |
| Aug. 1 | New York | 20 | Eddie McDuffee | 34.56 | Lost. |
| Aug. 13 | New York | 25 | Eddie McDuffee | 50.45 4-5 | Lost. |

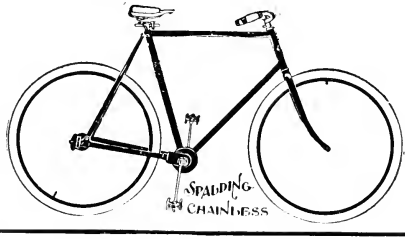
*Taylore fell.

## EDDIE BALD'S RECORD.

| Date. | Place. | Distance. | Opponent. | Time. | Result. |
|---|---|---|---|---|---|
| May 30 | Waltham | 1 | Tom Cooper | 2.20 | Won. |
| May 30 | Waltham | 1 | Tom Cooper | 2.23 4-5 | Won. |
| May 30 | Waltham | 1 | Tom Cooper | 2.20 | Lost. |
| June 11 | St. Louis | 1 | C. R. McCarthy | 2.07 1-5 | Won. |
| June 11 | St. Louis | 1 | C. R. McCarthy | 2.01 1-5 | Won, |
| Aug. 12 | Indianapolis | 1 | Tom Cooper | 3.58 | Won. |
| Aug. 12 | Indianapolis | 1 | Tom Cooper | 7.57 3-5 | Won. |

Won 6, lost 1.






# The Spalding Chainless

**Series No. 21...**
**Model No. 2122**

| | |
|---|---|
| *Frame* | Standard height, 22 inches; wheel base, $43\frac{5}{8}$ inches |
| *Front Fork* | Arch Fork Crown |
| *Bearings* | Tool Steel cut from bar; tempered, ground and polished |
| *Tires* | See Options |
| *Spokes* | Straight tangent, swaged; 28 front, 32 rear |
| *Cranks* | $6\frac{3}{4}$ inch, round spring steel |
| *Pedals* | Spalding, lead tread, non-slipping |
| *Handle Bar* | No. 9 |
| *Saddle* | Christy |
| *Gear* | 72 inch |
| *Weight* | As per specifications, without tires or saddle, 22 pounds |
| *Finish* | Black enamel, white striped, with black, red band rims |
| *Price* | $75.00 |
| *Options* | 24 inch frame, Model No. 2124; 26 inch frame, Model No. 2126. Tires, Kangaroo, Goodrich, Hartford, League, Palmer. Size, 28x$1\frac{1}{2}$ inches, unless otherwise specified. Gear, 66 or 81. Handle bars, Nos. 0, 3, 4, 5, 8 or 9. Finish, Maroon enamel, white striped, rims to match; Spalding blue enamel, white striped, with blue, red band rims. Combination pedals. |

## A. G. SPALDING & BROS.

NEW YORK CHICAGO DENVER

Bicycle Sales Department and Factory:
.....CHICOPEE FALLS, MASS.

# The Lady Spalding Chainless

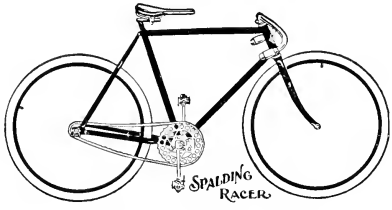
**Series No. 20...**
**Model No. 2022**

| | |
|---|---|
| *Frame* | Standard height, 22 inches; wheel base, $43\frac{5}{8}$ inches |
| *Front Fork* | Arch Fork Crown |
| *Bearings* | Tool Steel cut from bar; tempered, ground and polished |
| *Tires* | See Options |
| *Spokes* | Straight tangent, swaged; 28 front, 32 rear |
| *Cranks* | $6\frac{1}{2}$ inch, round spring steel |
| *Pedals* | Spalding Rubber |
| *Handle Bar* | No. 9 |
| *Saddle* | Christy |
| *Gear* | $66\frac{1}{2}$ inch |
| *Weight* | As per specifications, without tires or saddle, 23 pounds |
| *Finish* | Black enamel, white striped, with black, red band rims |
| *Price* | $75.00 |
| *Options* | 20 inch frame, Model No. 2020; 24 inch frame, Model No. 2024. Tires, Kangaroo, Goodrich, Hartford, League, or Palmer. Size, 28x$1\frac{1}{2}$ inches, unless otherwise specified. Gear, 72. Handle bars, No. 8. Finish, Spalding blue enamel, white striped, with blue, red band, rims; maroon enamel, white striped, rims to match. |


# A. G. SPALDING & BROS.

NEW YORK CHICAGO DENVER

Bicycle Sales Department and Factory:
.....CHICOPEE FALLS, MASS.




# The Spalding Racer

**Series No. 13...**
**Model No. 1322**

| | |
|---|---|
| *Frame* | Standard height, 22 inches; tubular construction; flush joints, reinforced; 3 inch drop at crank hanger; wheel base, $43\frac{5}{8}$ inches |
| *Front Fork* | Arch Fork Crown, Racer pattern |
| *Bearings* | Tool Steel cut from bar; tempered, ground and polished |
| *Tires* | See Options |
| *Spokes* | Straight tangent, swaged; 28 front, 32 rear |
| *Cranks* | $6\frac{1}{2}$ inch, round spring steel |
| *Pedals* | Spalding Rat Trap |
| *Handle Bar* | No. 5 |
| *Saddle* | Christy Racing, No. 13 |
| *Gear* | $74\frac{3}{8}$ inch—24x9 |
| *Tread* | 5 inches |
| *Weight* | As per specifications, without tires or saddle, 18 pounds |
| *Finish* | Special racing finish, Spalding blue, red head and fork crown, red band rims |
| *Price* | $60.00 |
| *Options* | 20 inch frame, Model No. 1320; 24 inch frame, Model No. 1324. Tires, Kangaroo, Goodrich, Hartford, League, or Palmer. Size, 28x$1\frac{1}{2}$ inches, unless otherwise specified. Handle bars, Nos. 0, 3, 4. 8, or 9. Sprockets, 20, 22, 25, or 26, front; 7; 8, or 10, rear. Cranks, $6\frac{3}{4}$ or 7 inches. Finish, black enamel, white striped, with black, red band rims; maroon enamel, white striped, with rims to match. Spalding lead, non-slipping, or combination pedals. Brown racing saddle, style C |

## A. G. SPALDING & BROS.

**NEW YORK CHICAGO DENVER**

**Bicycle Sales Department and Factory:**
**.....CHICOPEE FALLS, MASS.**

# The Spalding Roadster

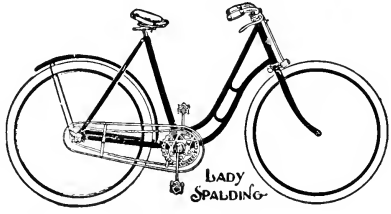
**Series No. 19...**
**Model No. 1922**

| | |
|---|---|
| *Frame* | Standard height, 22 inches; tubular construction; flush joints, reinforced; $2\frac{1}{2}$ inch drop at crank hanger; wheel base, $44\frac{3}{4}$ inches |
| *Front Fork* | Arch Fork Crown |
| *Bearings* | Tool Steel cut from bar; tempered, ground and polished |
| *Tires* | See Options |
| *Spokes* | Straight tangent, swaged; 28 front, 32 rear |
| *Cranks* | $6\frac{3}{4}$ inch, round spring steel |
| *Pedals* | Spalding lead, non-slipping |
| *Handle Bar* | No. 9 |
| *Saddle* | Christy |
| *Gear* | $74\frac{2}{3}$ inch—24x9 |
| *Tread* | 5 inches |
| *Weight* | As per specifications, without tires or saddle, 20 pounds |
| *Finish* | Black enamel, with black, red band rims |
| *Price* | $50.00 |
| *Options* | 24 inch frame, Model No. 1924; 26 inch frame, Model No. 1926. Tires, Kangaroo, Goodrich, Hartford, or League. Size, 28x$1\frac{1}{2}$ inches, unless otherwise specified. Handle bars, Nos. 0, 3, 4, 5 or 8. Sprockets 20, 22, 25 or 26, front; 8 or 10, rear. Brake. Finish, blue enamel, white striped, with blue, red band rims; maroon enamel, white striped, rims to match. Combination pedals. Saddles, Garford, No. 156 hard, or No. 158 padded |


## A. G. SPALDING & BROS.

**NEW YORK CHICAGO DENVER**

**Bicycle Sales Department and Factory:**
**.....CHICOPEE FALLS, MASS.**




# The Lady Spalding

**Series No. 18...**
**Model No. 1822**

| | |
|---|---|
| *Frame* | Curved, double tube; standard height, 22 inches; tubular construction; all joints reinforced; $2\frac{1}{2}$ inch drop at crank hanger; wheel base, $44\frac{3}{4}$ inches |
| *Front Fork* | Arch Fork Crown |
| *Bearings* | Tool Steel cut from bar; tempered, ground and polished |
| *Tires* | See Options |
| *Spokes* | Straight tangent, swaged; 28 front, 32 rear |
| *Cranks* | $6\frac{1}{2}$ inch, round spring steel |
| *Pedals* | Spalding Rubber |
| *Handle Bar* | No. 9 |
| *Brake* | Direct plunger, with rubber friction blocks |
| *Saddle* | Christy |
| *Gear* | 68 inch—22x9 |
| *Weight* | As per specifications, without tires or saddle, 20 pounds |
| *Finish* | Black enamel, with black, red band rims |
| *Price* | $50.00 |
| *Options* | 20 inch frame, Model No. 1820; 24 inch frame, Model No. 1824. Tires, Kangaroo, Goodrich, Hartford, or League. Size, 28x$1\frac{1}{2}$ inches, unless otherwise specified. Handle bars, No. 8. Sprockets, 20, front; 8 or 10, rear. Cranks, $6\frac{3}{4}$ inch. Finish, blue enamel, white striped, with blue, red band rims; maroon enamel, white striped, rims to match |

## A. G. SPALDING & BROS.

NEW YORK CHICAGO DENVER

**Bicycle Sales Department and Factory:**
**.....CHICOPEE FALLS, MASS.**

# THE SPALDING BICYCLE :: ::

THE SPALDING CHAINLESS has passed the experimental stage and we present it to the public as an unqualified success, and the essence of perfection in this type of machine. It is handsome in design, and possesses many points of mechanical detail which simplify its construction, and will appeal strongly to the mechanical mind.

THE LADY SPALDING CHAINLESS contains the same mechanical features found in the gentlemen's model. The lines of the frame have been carefully studied, and, while exceedingly graceful, afford ample room for free and easy action in riding, and convenience in mounting and dismounting.

THE SPALDING RACER is in design and appearance an entirely new machine and largely so in construction, although embracing many of the mechanical features which have done so much to make the Spalding name pre-eminent wherever known. Every part of its mechanism has been improved wherever possible. It is without doubt the best chain bicycle we have ever produced, and in quality and excellence will leave nothing to be desired.

THE SPALDING ROADSTER is specially constructed as our leader for the 1899 trade. In lines and appearances generally, it will resemble the Spalding Racer, and all its parts and fittings receive the same care and attention as do the corresponding parts in other machines of our manufacture. This machine will compare favorably with any bicycle on the market, of any make, or at any price, and will prove a leader in every sense of the word.

THE LADY SPALDING is the counterpart of the Spalding Roadster in quality and workmanship. The lines of the frame have been improved in detail and appearance, and it represents the latest and best in everything that goes to make an ideal ladies' mount. It is "Spalding Quality" throughout, which synonym stands for the best in everything it represents.

## A. G. SPALDING & BROS.

NEW YORK
CHICAGO
DENVER

:::

Bicycle Sales Department and Factory:
CHICOPEE FALLS, MASS.

The... **Christy Racing Saddle**

Used by all the leading riders, both amateur and professional....

PRICE **$2.00**

**A. G. SPALDING & BROS.**

NEW YORK CHICAGO DENVER

# EDDIE BALD.....

says there's only one saddle—the

# Christy Racing Saddle

During my career as a cyclist I have tried all the prominent saddles, my desire being to eventually select the best for the racing game; for, to a racing man the saddle counts for a great deal. To my way of thinking the Christy Racing Saddle is an ideal saddle for racing. It is built right, and the long pommel is something that racing men have long looked for. When the sprint comes the majority of the fast men leave their seats. Heretofore there has been nothing whatever between the legs to steady the rider, but the long pommel now does that and keeps the rider perfectly straight. It prevents wabbling and accidents. Much of my success this year in winning the championship can be attributed to the saddle I used.

EDDIE BALD.

**Price $2.00**

## A. G. Spalding & Bros.

New York Chicago Denver

# THE SHEPARD...

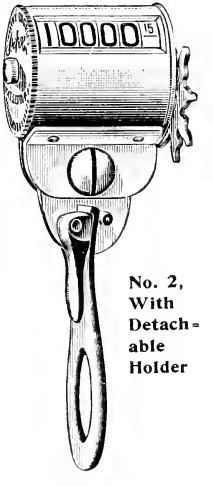
## BEVEL GEAR CYCLOMETER

100 Mile Trip.

10,000 Miles.

No. 23 a combination of No. 2, 10,000 miles, and No. 3, 100 mile trip, with detachable holders

The Only Perfect Cyclometer Made




No. 2, With Detachable Holder

| | | |
|---|---|---|
| No. 1. | With regular holder, . . . . . | $ .75 |
| No. 2. | With regular and detachable holder, . . . | .90 |
| No. 3. | With single trip and detachable holder, . . | .50 |
| No. 23. | Combination of Nos. 2 and 3, . . . . . | 1.50 |

Send for Catalogue of Spalding's Athletic Sports

# A. G. SPALDING & BROS.

NEW YORK CHICAGO DENVER

# EARL KISER

has ridden many saddles,
but he will only use the

# Christy Racing Saddle

I have given the Christy Racing Saddle some very thorough tests and intend to use it this season on the bicycle circuit. It has many points of superiority over all other saddles and is especially adapted for fast riding. When sprinting, the long pommel enables a man to leave the saddle and still obtain support that will steady him. Another good point about it is that it will undoubtedly prevent many accidents.

EARL H. KISER.

**Price $2.00**

## A. G. Spalding & Bros.

New York Chicago Denver

# THE "SEARCH-LIGHT" GAS LANTERN

It Burns Gas

Light Safety
Simplicity
Gas tight
Perfect combustion
Steady and easy flame
Accurate and easy adjustment

Our new "Wishbone" Bracket furnished with every Gas Lamp

BRIDGEPORT BRASS COMPANY
Bridgeport, Conn.

# ARTHUR GARDINER

has finished first many times, and he rides a

# Christy Racing Saddle

A great deal of my success this year on the racing path can be attributed to the fact that I rode the Christy Racing Saddle. During my career as a racing man, I have ridden all kinds of saddles, but never before have I ridden one upon which I felt so much at home. The long pommel, to my way of thinking, is just what the racing man wants. It gives him an opportunity to leave his seat on the sprint home, and prevents wabbling, which so frequently causes accidents and loses the race. In all my experience with saddles, I can truthfully say that the Christy is the only one that has never cut or chafed me.

ARTHUR GARDINER.

**Price $2.00**

## A. G. Spalding & Bros.

New York Chicago Denver

# The "Search-Light" Oil Lantern

every one knows, gives perfect satisfaction. "You can get oil at any farmhouse."

Bridgeport Brass Company
Bridgeport, Conn.

# TOM COOPER

ought to know something about cycle racing, and he rides a

## Christy Racing Saddle

When getting in shape last spring one of the racing men showed me a Christy Racing Saddle. I examined it and concluded at once that it was just what I wanted. I have ridden it throughout the season in all my races and take pleasure in recommending it to all racing men. The long pommel is one of the distinctive features of the saddle, and it is something riders have wanted for years. It aids the racer wonderfully in sprinting home, as it steadies him when he leaves the saddle.

TOM COOPER.

**Price $2.00**

# A. G. Spalding & Bros.

New York Chicago Denver

# The First Bicycle Trade Paper

...Sample Copy Free

Published Every Thursday
Two Dollars a Year

The LIVE Agent Reads
It—For Profit

## F. P. PRIAL CO.

P. O. Box 444

NEW YORK

# NAT BUTLER

says that the Christy meets all the requirements of the racing man, and he rides a

# Christy Racing Saddle

The Christy Racing Saddle meets all the requirements of the racing men. This no other saddle has ever done. I have ridden it in all my races this year, and am perfectly delighted with it. I like the long pommel, as a man feels safe with it when he starts to sprint. I take great pleasure in endorsing it.

NAT BUTLER.

## JAMES B. BOWLER Writes:

I have ridden the Christy Saddle since June, 1898, in every one of my races, and I can assure you that it is one of the most perfect saddles ever devised for a racing man. My racing has since July 4 been in the West, and the saddle has found its way to many of the Western wheels, and I will continue to ride the same, believing it to be the best.

JAMES B. BOWLER.

**Price $2.00**

# A. G. Spalding & Bros.

New York Chicago Denver

# Dr. BROWN

likes the construction of the Christy, and does not feel safe without the

# Christy Racing Saddle

I have used the Christy Racing Saddle during the past season, and I feel now as through I could not ride a race with any degree of safety without it. I like its construction, as the long pommel on the saddle is what all the racing men are looking for, and what they have been looking for for years. They were delighted when you put yours on the market.

DR. A. I. BROWN.

## KARL KASER Writes:

I am pleased to be able to say, having ridden the Christy Racing Saddle, that it is the best and most comfortable saddle on the market. Its points of superiority are so plain that they will commend themselves to every man on the racing path, especially sprinters.

KARL KASER.

**Price $2.00**

# A. G. Spalding & Bros.

New York Chicago Denver

# A. C. Mertens

will ride
no other saddle
but the

# Christy Racing Saddle

It is with great pleasure that I favorably indorse the Christy Racing Saddle after having ridden it during the entire season. The Christy Racing Saddle is built right, and is an ideal seat for a racing man.

A. C. MERTENS.

JOHN WEST, Trainer, writes :

Please find inclosed testimonials of saddle. Let me add what the boys think of it : They say of all the saddles they have used the Christy Racing Saddle is king of them all. They at first thought the pommel rather long, but have by use found it to be an advantage.

JOHN WEST,
Trainer and Manager.

**Price $2.00**

# A. G. Spalding & Bros.

New York Chicago Denver

# The Cycling West

THE LARGEST CIRCULATION OF ANY CLASS OR TRADE WEEKLY WEST OF CHICAGO. OFFICIAL ORGAN FOR THE CALIFORNIA ASSOCIATED CYCLING CLUBS, REACHING THEIR ENTIRE MEMBERSHIP WEEKLY. WE REACH THE TRADE AND RIDER THOROUGHLY FROM THE RIVER TO THE COAST, BRITISH COLUMBIA AND ALL FOREIGN PORTS IN THE PACIFIC OCEAN.

**Subscription.....$1.00 Per Annum**

Cycling West Publishing Co.

DENVER, COL.

# C. W. MILLER

is conceded to be the best six-day rider in the world. He wouldn't be if he didn't ride a

# Christy Racing Saddle

The Christy Racing Saddle this year has been popular because the racing men feel convinced that at last their wants are being catered to in the construction of a racing saddle. Anatomically, it is just what the riders want. It certainly is the best saddle ever made, and I take great pleasure in recommending it.

C. W. MILLER.

## MAJOR TAYLOR Writes.

I have ridden the Christy Racing Saddle, and have no hesitation whatever in pronouncing it the best racing saddle ever made. Its construction is especially adapted for fast racing. The long pommel is sure to please the sprinter, for it enables a man to leave the saddle, and still give him a support that will steady him. This is very important in the finish of a race when two or three men are very close, and a swerve to the right or left may cause a serious accident.

MAJOR TAYLOR.

**Price $2.00**

# A. G. Spalding & Bros.

New York Chicago Denver

# COAL OR FLOUR

BY WEIGHT

# ADVERTISING

BY GUESS

# WHY?

If a certain, **equitable** sum is charged for an advertisement in a circulation of, say, 50,000 copies, why should the advertiser pay just as much when the circulation drops to 40,000?

And, by the same token, why should the publisher stand it if the circulation goes up to 60,000?

Never having heard a satisfactory reason for such conditions, we adopted, in '95, the plan of charging advertisers for **exact paid circulation** each week, and **printing the figures.**

At this date (April 7, 1899,) L. A. W. BULLETIN advertisers are charged (**by the thousand**) for sending their advertisements to 70,195 "paid in advance" subscribers—just as they would be charged by the ton, acre, gallon or yard, for other commodities.

On the same date the paper is filed in 1,026 hotels and 1,102 libraries; also 2,893 sample copies are sent out, for all of which the advertiser is not charged.

We are looking for business, but we do not underrate the importance of first proving that we deserve it.

The L. A. W. BULLETIN is **read,** and has brought some remarkable results to advertisers.

Let us talk it over with you.

STERLING ELLIOTT, Boston

A. G. SPALDING & BROS. NEW YORK AND CHICAGO

# SPALDING'S BICYCLE RACING SUITS

## Bicycle Racing Suit No. 101

Columbia Blue, Maroon Trimmings
Royal Blue, Red Trimmings
Maroon, White Trimmings

Navy Blue, Orange Trimmings
Purple, White Trimmings
Red, Black Trimmings

Fine Worsted, with stripe woven in around neck. In the above combinations of colors.

No. **101.** Suit, complete, **$4.00**
Cap to match, 75 cents.

Same as No. 101, only very finest worsted. Any combination of colors. Made to order only.

No. **101X.** Suit, complete, **$6.75**
Cap to match, $1.00

## Bicycle Racing Suit No. 103

Lavender, Black Trimmings
Green, Red Trimmings
Maroon, White Trimmings

White, Royal Blue Trimmings
Red, Black Trimmings

Worsted Racing Suit. A very novel and showy suit on the track. In above combinations of colors.

No. **103.** Suit, complete, **$5.00**
Cap to match, 75 cents.

### BEST WORSTED GOODS

| | | |
|---|---|---|
| No. **1F.** | Shirt, in stock colors only, | **$2.50** |
| No. **1B.** | Knee Tights, in stock colors only, | **2.50** |

## Bicycle Racing Suit No. 104

Royal Blue, Black Trimmings
Pink, White Trimmings
Green, Red Trimmings

Orange, Black Trimmings
Navy Blue, White Trimmings

Worsted Racing Suit. New and handsome design. In above combinations of colors.

No. **104.** Suit, complete, **$5.00**
Cap to match, $1.00

## Bicycle Racing Suit No. 108

Navy, Royal and Columbia Blue
Red, White and Blue
Green, Red and Green

Maroon, White and Maroon
Black, Light Blue and Black

Worsted. In above combinations of colors.

No. **108.** Suit, complete, **$4.00**
Cap to match, 75 cents.

### CUT WORSTED GOODS

In solid colors only: Black, Navy and Maroon.

| | | |
|---|---|---|
| No. **601.** | Quarter Sleeve Shirt, | **$1.25** |
| No. **604.** | Knee Tights, | **1.25** |

### COTTON GOODS

In White, Black, Navy and Maroon.

| | | |
|---|---|---|
| No. **6E.** | Quarter Sleeve Shirt, sanitary cotton, | **50c.** |
| No. **4B.** | Knee Pants, | **50c.** |

*Any colors or combinations of colors other than those listed will cost $1.00 per suit extra.*

*Complete Catalogue of Athletic Goods Free.*

# A. G. SPALDING & BROS.

**NEW YORK** **CHICAGO** **DENVER**

# A $2.00 INVESTMENT

in a twelve months' subscription to the CYCLE AGE has assisted many a dealer on the road to success. It is a disseminator of useful and interesting information. A sample copy will be forwarded on application.

THE CYCLE AGE CO.

MONON BUILDING ☙ ☙ ☙ CHICAGO

# $25

will purchase the best juvenile bicycle made, the

**SPALDING JUVENILE**

Regular equipment, $25

Special equipment, $30

Full nickel-plated, $35

# $25

will also buy the best $25.00 bicycle in the world, Spalding's

**NYACK BICYCLE**

Regular equipment, $25

Nickel-plated, $30

**A. G. SPALDING & BROS.**

NEW YORK CHICAGO DENVER

# O. L. Stevens

knows a good thing when he sees it—and he rides a

# Christy Racing Saddle

At Louisville one of the boys showed me the Christy Racing Saddle. I instantly saw that it was jnst the saddle I felt was wanted by the racing men, so I at once sent for two Christy Racing Saddles. When I received them I gave them a thorough test, and decided to use them the entire season on my wheels. I feel confident they helped me materially in all my races.

O. L. STEVENS.

**Price $2.00**

## A. G. Spalding & Bros.

New York Chicago Denver

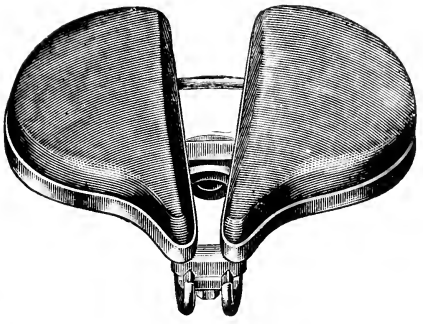
# The Christy Saddle

has received the endorsement
of 5,000 physicians of the
highest standing

Price $2.00 Everywhere

A. G. SPALDING & BROS.

NEW YORK CHICAGO DENVER



# The Christy Adjustable Saddle

.....PRICE $3.00

**The latest model of the famous Christy. Can be adjusted to any size required**

ENDORSED BY 5,000 PHYSICIANS

**A. G. SPALDING & BROS.**

NEW YORK CHICAGO DENVER

# SPALDING'S
# Athletic Library

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